SUBMISSION OF INDUSTRIAL CONSUMERS IN RESPONSE TO GENERAL ADMINISTRATIVE ORDER 2014-1 CONCERNING ENERGY EFFICIENCY AND DEMAND-SIDE MANAGEMENT

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Todd A. Richardson (16620-49)
Jennifer W. Terry (21145-53-A)
Joseph P. Rompala (25078-49)
LEWIS & KAPPES
One American Square, Suite 2500
Indianapolis, Indiana 46282
(317) 639-1210
TRichardson@Lewis-Kappes.com
JTerry@Lewis-Kappes.com
JRompala@Lewis-Kappes.com

Counsel for Indiana Industrial Energy Consumers, Inc. and Indiana Industrial Group

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This submission is presented on behalf of Indiana Industrial Energy Consumers, Inc. ("INDIEC") and the Indiana Industrial Group, an ad hoc group consisting of both INDIEC members and other businesses operating industrial facilities in Indiana (collectively the "Industrial Consumers"). On April 9, 2014, the Commission issued General Administrative Order 2014-1 ("GAO 2014-1"), inviting comments from interested parties with respect to energy efficiency and demand-side management ("EE/DSM") programs. GAO 2014-1 arose from the passage of Senate Enrolled Act 340 ("SEA 340"), and the subsequent request by Governor Pence seeking Commission recommendations on the subject of EE/DSM policy. This submission is made by the Industrial Consumers in response to GAO 2014-1.

I. SUMMARY

The Industrial Consumers fully understand the importance of energy efficiency in their own operations and support efforts to conserve energy resources and reduce demand as a matter of policy. In two respects, the establishment of energy efficiency objectives should incorporate criteria that better advance that policy. First, efficiency goals should be oriented on mitigating peak demand as well as reducing energy consumption levels, in order to reduce and forestall a need for incremental generation resources. Second, energy usage metrics should differentiate between, on one hand, inefficiencies and deficient energy management and, on the other hand, load growth due to population changes, increases in productivity and economic development.

The industrial opt out provided for in SEA 340 appropriately reflects the capabilities and incentives of industrial consumers to achieve efficiencies outside the context of regulatory programs. Industrial operations are energy-intensive, making energy expense a key factor in the cost of production, and moreover are subject to intense competition, requiring diligence to avoid waste of expensive energy resources. The Industrial Consumers, accordingly, have demonstrated

a longstanding commitment to optimizing energy utilization in their operations. The opt out properly recognizes that such consumers are in the best position to identify and assess potential efficiencies in their specific industrial processes, while allowing for participation in regulatory programs that match their needs in given instances. Those opting to participate will pay the properly allocated costs through rates, but importantly those opting out will not be burdened with rate increments associated with programs not utilized to achieve efficiencies.

Based on the Industrial Consumers' experience with existing programs, and as a matter of ratemaking policy, the effectiveness of EE/DSM programs is impeded by the collection of lost margins and shareholder incentives through rates. Rates pay for service, but lost margin recovery pays for non-service. Regulation is supposed to act as a surrogate for competition, but a competitive business would not be able to collect charges from customers for lost sales. Utilities are already compensated for risk through rate of return and are expected to manage fluctuations in demand, which occur constantly for many reasons. Ordinary rate proceedings are suited to addressing any revenue deficiencies, without special trackers for lost margins. Efficiency is best encouraged by allocating the cost savings to consumers, whose energy usage is the focus of conservation and DSM efforts. By contrast, lost margin trackers and shareholder incentives only indirectly promote utility efforts to promote consumer behavior, at the cost of reducing the direct incentive to the energy user actually in a position to achieve efficiency gains.

Energy efficiency is also advanced by regulatory policies favoring development of private generation resources and competitive procurement standards for public utilities. A number of industrial operations in Indiana already utilize cogeneration or combined heat and power facilities, waste-to-energy units, and other privately owned and operated energy resources. Those facilities are typically energy-efficient and environmentally friendly. By reducing the

demand that must be met by utilities through rate-supported generation assets, private energy resources mitigate the scope and timing of utility construction projects funded by the public. Competitive procurement standards, furthermore, promote financial efficiency when utilities do need to add supply resources to meet demand, as a check against the bias for construction of rate base assets. Where purchased power is the most cost-effective option, in-state emissions are avoided and the rate burden on consumers is reduced. Private generation and competitive procurement, accordingly, promote efficiency and mitigate the need for utility construction of new generation facilities, and therefore should be favored as a matter of regulatory policy.

II. RECOMMENDATIONS FOR REPORT

The Industrial Consumers propose that the subjects discussed below be addressed in the EE/DSM report contemplated by GAO 2014-1, and respectfully request that the Commission incorporate the policy recommendations and conclusions presented in this submission. Insofar as this document focuses on the interests and perspective of the Industrial Consumers, this submission is not intended to serve as a comprehensive presentation on all the issues and considerations the Commission may deem appropriate to address in the report.

A. Efficiency Goals Should Address Peak Demand as Well as Usage Reductions and Should Distinguish Inefficiency and Waste from Economic Development and Load Growth

The policy promoting efficient use of energy resources advances the public interest in cost-effective utility services by minimizing waste, reducing emissions and mitigating the need for construction of new generation capacity. Framing efficiency objectives solely in terms of decreases in gross energy consumption, however, does not fully reflect the targeted conduct or the intended consequences. In addition, efficiency goals should be oriented on achieving

reductions in peak demand levels, and further should differentiate between inefficient or wasteful energy usage as opposed to load growth due to economic development or population changes.

The level of generation capacity required for reliable utility service is driven by projected demand. Baseload capacity is a function of base demand, and peak demand determines the extent of incremental capacity resources the utility must maintain or procure to provide service at times of highest consumption. Overall decreases in energy usage tend to lower the demand curve, and thereby delay the need for and reduce the scale of expensive capacity additions. Even without changes in base demand, however, and with only modest impact on overall energy consumption, reductions in peak demand advance efficiency objectives by obviating the need for incremental peak supply resources. The most efficient utilization arises from the steadiest demand, minimizing capacity that must be constructed and maintained but is needed only on occasion to handle demand spikes. Measures aimed at reducing peak demand, accordingly, promote efficiency and more cost-effective utility rates.

Energy consumption fluctuates constantly for a variety of reasons, only some of which relate to the degree of consumer efficiency and diligence in energy management. Measuring efficiency goals only by reference to historical energy consumption, accordingly, does not target with precision the consumer conduct the policy is meant to encourage. In particular, shifts in population and load characteristics, productivity levels and economic development gains or losses may all result in changes in energy usage that do not indicate inefficiency or waste. A region with an increasing population will see higher energy demand even if the extent of efficiency efforts remains constant, and conversely a downward trend in population will lead to lower consumption even without any improvement in efficiency.

For large employers like the Industrial Consumers, the goals of energy efficiency should not be incompatible with economic development and the success and expansion of Indiana facilities. Consumption is reduced, after all, if an industrial consumer cuts back on production or closes a plant, but such reductions do not improve efficiency. Expanding a production facility, investing in Indiana locations, hiring additional employees, increasing productivity and opening new plants in Indiana all promote economic development and produce benefits for the State economy, but at the same time tend to increase energy consumption regardless of how efficient the operations may be. While the Industrial Consumers have strong motivation to achieve efficiencies in the utilization of expensive energy resources, successful efforts may result in higher production levels rather than decreased energy consumption. Especially where the national economy is recovering from a recession and industrial productivity is rebounding, comparing consumption to an historical baseline is not an accurate measure of efficiency.

Previously established efficiency objectives recognize the independent variables affecting consumption to a limited extent, by adjusting for weather normalization. The same rationale supports further refinement. For the industrial class, the better measure of efficiency is energy usage per unit of production, as opposed to overall consumption levels. For other classes, changes in population may be accounted for by computing energy usage per consumer or account. In any event, the policy favoring efficiency should not inhibit economic development and should not tie results to shifts in consumer demographics.

B. The Industrial Opt Out Properly Recognizes the Capability of Large Consumers to Achieve Efficiencies Independently

Under the provisions of SEA 340, an industrial consumer with a load of one megawatt or greater at a given location may opt out of EE/DSM programs implemented pursuant to Commission order, and from that point forward will no longer be responsible for associated cost

recovery through rates except as accrued prior to the opt out. Such a customer can later opt back in, subject to rate responsibility for a three-year period. Governor Pence allowed SEA 340 to pass into law without his signature, expressing disappointment that it eliminated existing statewide programs but recognizing that imposing costs on manufacturers in particular makes Indiana less competitive.[1] He announced the Commission was being asked to make recommendations for new programs "that would include an opt-out for large electricity consumers."[2] His letter to the Commission, and the recitals in GAO 2014-1, direct that the Commission recommendations are to "[a]llow for an opt-out whereby large electricity consumers can decide not to participate in a DSM program."

The provisions of SEA 340, the directions of Governor Pence and the terms of GAO 2014-1, accordingly, all endorse the opt out for industrial consumers. That framework supports the commitment of the Industrial Consumers to energy efficiency and advances the underlying policy objectives. The Industrial Consumers have demonstrated capability to evaluate and implement efficiency improvements in their operations independently, are in the best position to do so, and can pursue efficiency in a cost-effective manner by determining whether and when to participate in regulatory programs as opposed to utilizing internal resources.

The Industrial Consumers have strong motivation to optimize the efficient use of energy. Industrial operations are energy-intensive, making energy expense a major portion of the overall cost of production. The Industrial Consumers are subject, moreover, to intense competitive pressure in national and global markets, requiring a high degree of diligence in managing costs and avoiding waste. Especially as industrial electricity rates have escalated sharply in Indiana

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[1] *See* 3/27/14 Press Release at http://www.in.gov/activecalendar/EventList.aspx?fromdate=3/25/2014&todate=3/31/2014&display=Month&type=public&eventidn=164938&view=EventDetails&information_id=198287 .

[2] *Id.*

and are expected to continue to increase in the foreseeable future, efficient utilization of highly expensive energy resources has a material impact on the competitiveness of Indiana facilities. Aside from financial performance, the Industrial Consumers are sophisticated businesses comprised of motivated individuals who take great pride in their work and care deeply about the quality of life in their communities. They continually strive to identify and realize process improvements as a routine component of the functions they perform. Both as a matter of corporate responsibility and individual commitment, they support the policy of energy efficiency and understand the benefits of conserving energy resources and preventing waste.

As sophisticated energy users, furthermore, the Industrial Consumers are not dependent on utility personnel or third party administrators of regulatory programs to evaluate potential efficiencies. They are the experts in their own industrial processes and business operations, and are in the best position to determine where and how to implement any improvements. Unlike small volume consumers who may benefit from home energy audits and education on efficiency, the Industrial Consumers have the expertise and resources to assess efficiency improvements without reliance on regulatory programs. Voluntary measures by large consumers, moreover, maximize the efficiency and cost-effectiveness of efforts because the consumer does not have to pay for administrative and program costs through utility rates. At the same time, the devotion of private resources results in efficiency gains that are achieved without cost recovery through regulated rates.

Apart from participation in EE/DSM programs, the Industrial Consumers also support energy efficiency through other mechanisms. In particular, both demand response and interruptible tariffs provide utilities with a capability to reduce industrial load in instances of demand spikes and system constraints. Such measures facilitate the efficient management of

utility resources, mitigate peak demand, and offset a need for incremental generation capacity. In addition, industrials utilizing private generation facilities reduce the demand that must be served by energy utilities using rate base assets, improving the efficiency and cost-effectiveness of public resources funded through regulated rates.

Because of the importance of efficient use of energy to industrial operations active in highly competitive markets, the Industrial Consumers have a longstanding dedication to efficiency that is not dependent on participation in regulatory EE/DSM programs. The specifics of energy cost profiles and energy savings strategies have competitive significance, in light of the major role of energy expense in the cost of production, and consequently such details may be confidential and proprietary. Attached as Exhibit A, however, are publicly available records discussing energy efficiency initiatives and policies undertaken by the Industrial Consumers. In addition, Exhibit B describes particular efficiency efforts and achievements, without the disclosure of competitively sensitive customer-specific information. As indicated in those materials, the Industrial Consumers can and do undertake energy efficiency improvements on their own initiative and through their internal resources.

The opt out structure allows for industrial participation in EE/DSM programs in those instances where a given program meets the needs of a particular operation. Industrials that do not opt out, and those later electing to opt back in, will cover their allocated share of costs through rates along with other participants. Industrials electing to opt out, however, will be able to manage energy usage and enhance the efficiency of their operations using private resources and internal funding, without the imposition of costs associated with regulatory programs. Programs aimed at residential consumers, notably, such as compact fluorescent bulb replacement and home energy audits, are funded through residential rates. The industrial opt-out, therefore,

should not affect the viability or funding for properly designed programs targeting the efficiency potential of other classes of consumers.

With regard to all EE/DSM programs, including those available to industrials as well as other customer classes, accurate and complete estimates of the program costs and all associated rate impacts are important to facilitate an intelligent evaluation of cost-effectiveness. Improving energy efficiency is a policy firmly endorsed by the Industrial Consumers, but when incremental gains come at a substantial cost the reasonableness should be determined in light of thorough and reliable budget projections. The impact on consumers must reflect the full extent of all costs embedded in rates, including any lost margins and shareholder incentives collected by the utility.

As inefficiencies are addressed and higher levels of effective energy management are achieved, additional incremental gains can be expected to require progressively increasing investment. Especially for the Industrial Consumers, who have been focused on energy efficiency for many years, regulatory programs aimed at shrinking opportunities can involve escalating expense for diminishing returns. The opt out approach, therefore, appropriately enables industrials to participate in EE/DSM programs that yield efficiency benefits in given circumstances, while otherwise allowing such customers to manage energy expense and enhance efficiency using their own expertise and resources, without the added rate burdens associated with utility programs.

C. Recovery of Lost Margins and Shareholder Incentives Conflict with Ratemaking Principles and Reduce Efficiency Savings

Based on experience with EE/DSM programs in Indiana, and in connection with future costs associated with participation in regulatory programs as well as legacy obligations of customers that opt out, the Industrial Consumers submit that allowing utilities to recover lost

revenues arising from reductions in energy consumption and additional shareholder incentives is contrary to established ratemaking principles and counterproductive in promoting efficiency.

Prior to SEA 340, the Commission permitted recovery of lost margins and some shareholder incentives pursuant to regulation,[3] despite the absence of express statutory authority for such ratemaking treatment.[4] The regulations are phrased with the permissive "may," allowing for but not requiring such recovery. Under SEA 340, "energy efficiency program costs" are defined to include lost revenues and approved incentives, as well as program costs.[5] The new statute also provides that, for new EE/DSM programs proposed to be effective after the beginning of 2015, program costs will be recoverable upon Commission approval in the same manner as with prior programs.[6] As a matter of policy, accordingly, and as a recommendation to the General Assembly and the Governor, the Commission can and should decline to endorse the recovery of lost margins and shareholder incentives.

A basic principle of utility regulation is that charges must be based on service.[7] Contrary to that principle, rate recovery of lost revenue arising from reductions in energy consumption amounts to the imposition of charges for non-service. "Any allowable operating expense must have a connection to the service rendered before it can be recovered through retail rates."[8] Lost margin recovery deviates from that principle because it allows the utility to charge customers for

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[3] *See* 170 Ind. Admin. Code §§4-8-3(c), 4-8-6, 4-8-7.

[4] The regulations were promulgated to assist in the administration of the Utility Powerplant Construction Act, Ind. Code §8-1-8.5-1 *et seq*. *See* 170 Ind. Admin. Code §4-8-2(a). That Act calls for consideration of demand-side measures when reviewing a utility proposal to construct new generation facilities (*see* Ind. Code §8-1-8.5-4(2)) and provides for rate recovery of costs associated with such facilities (*see* Ind. Code §8-1-8.5-6.5), but does not include any provision authorizing rate recovery for lost revenues arising from efficiency programs or shareholder incentives for such programs. An agency cannot, by regulation, add to or detract from its authority as conferred by statute. *See Leone* v. *Commissioner, Indiana Bureau of Motor Vehicles*, 933 N.E.2d 1244, 1250 (Ind. 2010).

[5] *See* Ind. Code §8-1-8.5-9(d).

[6] *See* Ind. Code §8-1-8.5-9(m).

[7] *See Citizens Action Coalition* v. *Northern Indiana Public Service Co.*, 485 N.E.2d 610, 613-14 (Ind. 1985), *cert. denied*, 476 U.S. 1137 (1986); *Indiana Gas Co.* v. *Office of Utility Consumer Counselor*, 675 N.E.2d 739, 743-44 (Ind. App.), *transfer denied*, 690 N.E.2d 1180 (Ind. 1997).

[8] *Citizens Action Coalition*, 485 N.E.2d at 614. *See also Indiana Gas*, 675 N.E.2d at 744 ("Indiana Gas is entitled to recover only costs related to the provision of service.").

service that is no longer being rendered due to successful energy conservation and efficiency efforts. Charges for non-service are inconsistent with sound ratemaking.

Regulation, after all, is supposed to act as a surrogate for competition, and to compensate for the missing element of competition in order to protect consumers from abuses of the utility's monopoly position.[9] Using an example of an automobile company investing in a factory that does not end up producing cars, the Indiana Supreme Court explained that the regulatory framework "protects consumers from having to pay for service not received, something which they would not be subjected to in a competitive industry."[10] By the same token, a competitive business would not be able to charge customers for non-service due to reduced demand. If a consumer purchases a fuel-efficient vehicle, the gas station cannot impose charges on that customer for lost gasoline sales. If a pharmaceutical product abates a medical condition, the manufacturer cannot continue to charge the customer for medication that is no longer being used. Regulation, then, should not force consumers to pay for a level of service that is not being provided by the utility.

Ratepayers are not insurers of utility revenues.[11] The utility exists to provide service to the public; the public does not exist to preserve earnings for utilities. The utility business is not meant to be risk-free. Indeed, demand and consumption fluctuate constantly for a wide variety of reasons, and utility investors are compensated for business risk through the allowed rate of return in regulated rates.[12] The utility is expected to manage shifts in consumption, up or down, and to invest prudently in resources to provide efficient and reliable service in light of projected

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[9] *See Northern Indiana Public Service Co.* v. *Citizens Action Coalition*, 548 N.E.2d 153, 159-60 (Ind. 1989); *Citizens Action Coalition*, 485 N.E.2d at 614-15; *Indiana Gas Co.* v. *Office of Utility Consumer Counselor*, 575 N.E.2d 1044, 1046 (Ind. App. 1991).

[10] *See Citizens Action Coalition*, 485 N.E.2d at 615.

[11] *See Citizens Action Coalition*, 485 N.E.2d at 615; *Indiana Gas*, 675 N.E.2d at 744.

[12] *See Indiana Gas*, 575 N.E.2d at 1052; *L.S. Ayres & Co.* v. *Indianapolis Power & Light Co.*, 169 Ind. App. 652, 660, 351 N.E.2d 814, 821 (1976); *City of Evansville* v. *Southern Indiana Gas and Electric Co.*, 167 Ind. App. 472, 481, 339 N.E.2d 562, 570 (1975).

demand. If and when changes in circumstances in the aggregate lead to a material revenue deficiency, the utility has recourse to commence a general rate proceeding. Regulation need not presume every change in consumption necessitates a compensating rate adjustment.

Recovery of lost margins relating to efficiency savings is in the nature of a rate tracker, because it adjusts rates to account for a specified phenomenon in isolation of all the other diverse factors and conditions affecting the sufficiency of rates. If lower consumption due to efficiency gains is offset, for example, by added load due to productivity increases or greater population, then the utility may realize incremental revenue for lost margins even in the absence of a net loss in sales volume. A reduction in sales to captive customers could facilitate greater off-system sales, or might be matched by the utility with reduced investment in supply resources, or may be outweighed by lower expenditures in some other aspect of the business. A lost margins tracker provides a mechanism for rate adjustments, consequently, that may or may not be necessary to adhere to the standard of just and reasonable rates.[13]

Lost revenue recovery or other rate incentives, furthermore, should not be necessary to encourage utilities to establish effective EE/DSM programs. In the first place, incentive ratemaking is not permitted under traditional regulation.[14] That is why the Alternative Utility Regulation Act authorizes incentive rates only when approved as part of an alternative regulatory plan.[15] Proceedings to establish EE/DSM programs and associated ratemaking treatment, however, have not been conducted under the Alternative Utility Regulation Act or approved as alternative regulatory plans. The provision of rate incentives, in any event, should be recognized as an exceptional ratemaking mechanism departing from established standards.

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[13] *See* Ind. Code §8-1-2-4. *See also L.S. Ayres*, 167 Ind. App. at 660, 351 N.E.2d at 821 ("The Commission's primary objective is to reach an overall result that is equitable and that will permit continuity of utility services on a sound financial basis.").

[14] *See Citizens Action Coalition* v. *Public Service Co.*, 612 N.E.2d 199, 202 (Ind. App. 1993), *transfer denied*.

[15] *See* Ind. Code §8-1-2.5-6(a)(2).

In the second place, utilities are not at liberty simply to suspend operation of all EE/DSM programs, or to condition continued efficiency efforts on the provision of substantial financial incentives. The Utility Powerplant Construction Act authorizes the Commission to consider the adequacy of efforts to promote efficiency and energy conservation when deciding whether to grant or deny a request for certification to construct generation facilities,[16] putting the utility at risk if it fails to conduct sufficient EE/DSM initiatives. Given the past absence of legislation requiring EE/DSM programs, regulations contemplating incentives could have been regarded as a way to incline a utility to establish such programs voluntarily. At this point, however, the utilities have reaffirmed their commitment to EE/DSM and the Governor has made it clear that "energy efficiency is an important part of our energy strategy" and "is a critical part of ensuring that our public utilities provide electricity at the lowest cost possible."[17]

If utilities are required, by statute or order, to provide EE/DSM programs, then rate incentives should not be needed to induce them to do so. Regulatory requirements are enforceable without extending financial incentives to encourage compliance, and failure by a utility to fulfill its obligations subjects the utility to the Commission's broad remedial powers.[18] If a utility engages in conduct that is unreasonable, insufficient or unlawful, or if any service is inadequate, the Commission has authority to require the utility to correct the deficiency.[19] As with other services furnished by public utilities, the adequate provision of EE/DSM services is not dependent on special rate incentives to encourage compliance.

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16 *See* Ind. Code §8-1-8.5-4(2).

17 *See* March 27, 2014 Letter, attached to GAO 2014-1.

18 *See* Ind. Code §§8-1-2-58, 8-1-2-69, 8-1-2-115. *See also Airco Industrial Gases* v. *Indiana Michigan Power Co.*, 614 N.E.2d 951, 954 (Ind. App. 1993) (holding failure by utility to comply with Commission order was "unreasonable" and therefore subject to remedies under Ind. Code §8-1-2-69).

19 *See* Ind. Code §8-1-2-69.

Finally, incentives provided to utilities only indirectly influence the consumer conduct on which successful EE/DSM efforts hinge. The consumer is the entity whose behavior directly affects demand and usage levels. Rate incentives supposedly encourage utilities to, in turn, encourage consumers to reduce consumption and use energy more efficiently. Paying the utility for such encouragement, however, comes at the expense of the direct incentive to the consumer. The price signal to the consumer is strongest when the full cost savings from reduced consumption are retained by the consumer, instead of being shared between the consumer and the utility. The imposition of lost revenue charges and shareholder incentives, accordingly, dilutes the direct incentive to the target of EE/DSM initiatives – the consumer – and hence is counterproductive to the policy favoring energy efficiency.

D. Energy Efficiency Is Advanced by Support for Private Generation and Competitive Procurement Standards

The same underlying reasons supporting the policy in favor of energy efficiency are also advanced by the development of private generation resources and by the establishment of stronger competitive procurement standards. Private generation projects are typically both energy-efficient and environmentally friendly, and like energy efficiency initiatives serve to mitigate the scope and timing of new generation capacity constructed by utilities. Competitive procurement standards, like energy efficiency, address the inherent bias inclining utilities to invest in rate base assets, thereby promoting greater financial efficiency and reducing the need for utility construction of new generation facilities.

A variety of industrial operations in Indiana utilize private generation resources to meet a substantial portion of their energy needs.[20] Those resources include cogeneration plants,

[20] A series of projects in northern Indiana were developed in the 1990s by subsidiaries of Primary Energy, which at the time was an affiliate of NIPSCO. Some of those projects are described on the Primary Energy website at http://www.primaryenergy.com/projects/Project-Dashboard/default.aspx . Another listing of private generation

combined heat and power units, waste-to-energy facilities and other technologies. In addition, renewable power options in Indiana such as wind farms and solar facilities have been developed by non-utilities. Under both Indiana and federal law, there is a strong policy favoring the development of private generation.[21]

Promoting private energy projects supports the efficiency policy in several respects. Private generation that is tailored to support a particular industrial operation is typically energy-efficient. New private generation facilities built to modern standards will generally perform with greater efficiency than older utility plants. Such facilities also tend to involve lower emissions and therefore provide incremental benefit in meeting energy demands within environmental requirements. To the extent that consumers are able to cover a greater portion of their total energy needs using private supply resources funded by private investment, the amount of utility capacity that must be supported through regulated rates is correspondingly reduced. Private generation is properly regarded as a favored demand-side measure along with EE/DSM initiatives to decrease reliance on utility resources funded by the public, as recognized in the Commission's integrated resource planning regulations.[22]

Promoting the continued development of private generation resources can be aided by regulatory policy as well as further legislative provisions. In particular, the Commission has existing authority to regulate the provision of back-up, maintenance and supplemental power as needed from time to time to support industrial operations when a private generator has scheduled or unplanned outages, as well as rates for the purchase of excess power by utilities.[23] "The rates shall be established at levels sufficient to stimulate the development of alternate energy

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facilities in Indiana includes 38 units with an aggregate capacity of more than 2,200 MW. *See* http://www.eea-inc.com/chpdata/States/IN.html .

[21] *See* Ind. Code §§8-1-2.4-1 *et seq.*; Ind. Code §8-1-37-4(a); 16 U.S.C. §§796(17)(A), 824a-3.

[22] *See* 170 Ind. Admin. Code §§4-7-4(4), 4-7-6(a) & (b), 4-7-8(4) &(7).

[23] *See* Ind. Code §8-1-2.4-4.

production, cogeneration, and small hydro facilities in Indiana, and to encourage the continuation of existing capacity from those facilities."[24] The General Assembly has reiterated that policy with recent legislation adding "private generation projects" involving cogeneration facilities with capacity of greater than 80 MW to the categories of favored resources.[25]

Similarly, the Commission has supported energy efficiency as well by considering, in the context of utility proposals for approval of supply-side capital projects, the availability and economics of competitive resources such as purchased power. The developing Commission practice in that regard was recently endorsed by the General Assembly in a provision requiring findings on competitive procurement alternatives in connection with utility proposals to construct generation facilities.[26] Like EE/DSM policy, competitive procurement standards serve as a check against the utility bias favoring construction of rate base assets.[27] Where reliable power from a competitive supplier is the least-cost option, the market discipline of competitive procurement holds utilities to a higher standard of financial efficiency. Such purchases, as with successful EE/DSM efforts, can also serve to reduce in-state emissions and postpone or reduce the need for utility construction projects funded through regulated rates.

In connection with competitive procurement as well as private generation, the Commission can and should promote efficiency by exercising its existing authority in the context of regulatory proceedings. Insofar as the Commission's report on EE/DSM programs will inform Indiana energy policy and potentially influence future legislation, the Industrial Customers respectfully request that the report identify private generation and competitive

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[24] *Id.* §4(b).
[25] *See* HEA 1423, *adding* Ind. Code §§8-1-2.4-2(g), 8-1-2.4-6.
[26] *See* HEA 1162, *adding* Ind. Code §8-1-8.5-5(e).
[27] *Compare* 170 Ind. Admin. Code §4-8-3(a) ("The regulatory framework attempts to eliminate or offset regulatory or financial bias against DSM, or in favor of a supply-side resource, a utility might encounter in procuring least-cost resources.").

procurement as additional means by which the policy favoring energy efficiency can be advanced.

III. CONCLUSION

In support of Indiana policy encouraging energy efficiency and demand-side measures to manage energy usage, the Industrial Consumers respectfully submit that the Commission report contemplated by GAO 2014-1 should include the following conclusions and recommendations:

1. Efficiency goals should be framed in a manner that promotes reductions in peak demand and not only reductions in total energy consumption.

2. Efficiency goals should distinguish between, on one hand, inefficiency and waste of energy resources and, on the other hand, load changes attributable to altered demographics, productivity levels and economic development.

3. Allowing industrial consumers to opt out of regulatory EE/DSM programs supports efficiency because industrials have the expertise and ample incentive to effectuate the efficient use of expensive energy resources independently.

4. In addition to internal efforts to optimize energy use, industrial consumers support energy efficiency by participation in demand response, by utilization of interruptible tariff options and by deployment of private generation resources.

5. Existing and potential EE/DSM programs should be evaluated in light of accurate and complete estimates of all costs embedded in regulated rates, including not only program and administrative costs but also any lost margins or shareholder incentives recovered through rates.

6. As a matter of sound ratemaking and to enhance the direct price signal to consumers, utilities should not recover lost revenue from reduced sales due to efficiency efforts or additional shareholder incentives through regulated rates.

7. Costs for EE/DSM programs are appropriately reflected in rates in accordance with cost-causation principles; in the event of a material revenue deficiency, whether arising from reduced consumption or any other factors affecting a utility's financial performance, a general rate proceeding is the appropriate mechanism to determine just and reasonable rates.

8. Energy efficiency is promoted by the development of private generation resources and by the establishment of competitive procurement standards, both of which should be supported along with EE/DSM programs as a matter of regulatory policy.

Todd A. Richardson (16620-49)
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LEWIS & KAPPES
One American Square, Suite 2500
Indianapolis, Indiana 46282
(317) 639-1210
TRichardson@Lewis-Kappes.com
JTerry@Lewis-Kappes.com
JRompala@Lewis-Kappes.com

Counsel for Indiana Industrial Energy Consumers, Inc.
and Indiana Industrial Group

EXHIBIT A TO THE INDUSTRIAL CONSUMERS' SUBMISSION IN RESPONSE TO GAO 2014-1

INDUSTRIAL CONSUMERS' EXHIBIT A

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* Material from Annual Reports, Sustainability Reports, Corporate Responsibility Reports, or Citizenship Reports are selections from the complete report.

TAB 1

AIR LIQUIDE

AIR LIQUIDE

Creative Oxygen

2013 REFERENCE DOCUMENT

INCLUDING THE SUSTAINABLE DEVELOPMENT REPORT

Conducting Group operations while protecting the environment

Energy efficiency objectives

Key Indicators

- Evolution of energy consumption for air separation units per m^3 of gas produced.
- Evolution of energy consumption for hydrogen units per m^3 of gas produced.
- Evolution of the distance traveled per ton of gas delivered (Industrial Merchant activity).

2015 objective

Improve by at least 2% from 2011 to 2015 the energy efficiency of the following activities: air separation units, hydrogen units, and product deliveries.

Achieving the objectives

- **Between 2011 and 2013, energy consumption for air separation units per m^3 of gas produced remained stable.**
- **Between 2011 and 2013, energy consumption for hydrogen units per m^3 of gas produced improved by 0.6%.**
- **Between 2011 and 2013, the distance traveled per ton of gas delivered (Industrial Merchant activity) improved by 1.8%**

Air Liquide made the strategic choice of allocating its resources, in particular its investments, to help reduce the direct CO_2 emissions of its activities on its operational scope as well as on its customers' sites. This is particularly achieved by offering customers solutions to enable them to reduce their own emissions and by steadily improving production and transportation operations.

THE GROUP'S ENVIRONMENTAL FOOTPRINT

Environmental indicators concerning the Group as a whole

In its **production** activities, the main trends concerning environmental data in 2013 are the following:

- Volumes of air gas produced were up slightly compared to 2012. As a result, electrical energy consumption, which is mainly used in air separation units, also increased slightly. By contrast, related indirect CO_2 emissions were slightly lower due to a positive change in the electricity carbon content in countries where the Group has production plants. In addition, in 2013 the Group redefined the calculation method for indirect emissions to take account of all the electricity produced by its cogeneration.
- Thermal energy consumption and direct CO_2 emissions were up slightly, mainly as a result of the consolidation impact.

Presented here are the environmental elements most representative of the Group's activities. They cover a total of **517** Air Liquide production units or sites and concern:

- large air separation units;
- hydrogen and carbon monoxide units;
- cogeneration units;
- acetylene units;
- nitrous oxide units;
- carbon dioxide liquefaction and purification units;
- units in the Hygiene and Specialty Ingredients activity;
- Engineering & Construction units;
- Welding production units;
- the main Research & Development sites and technical centers.

The indicators concerning the environmental impact of the **transportation** of products of the Group's Industrial Merchant and Healthcare business lines as well as those of water management and the main **waste and byproducts** are presented to stakeholders. Other indicators are also communicated.

The most relevant environmental indicators for the total of the 10 types of production units (517 units) and transportation on a worldwide scope

	2009	2010	2011	2012	2013
Evolution of energy consumption per m³ of air gas produced [a] [b]	103.3	99.0	99.0	98.8	99.0*
Evolution of energy consumption per m³ of hydrogen produced [a] [c]	98.7	98.3	98.5	98.4	97.9*
Evolution of the distance traveled per ton of industrial gas delivered [a] [d]	97.4	96.3	97.1	97.8	95.3*
Annual electricity consumption *(in GWh)*	21,139	24,924	26,661	27,578	28,305*
Annual thermal energy consumption *(in LVH terajoules)* [e]	183,381	204,434	213,198	229,177	232,270* [f]
Annual water consumption *(in millions of m³)*	59.9	66.1	67.2	66.4	67.5* [g]
Annual emissions of CO_2 avoided by cogeneration and on-site customer units *(in thousands of tons)*	-819	-870	-1,051	-987	-953
Total direct greenhouse gas (GHG) emissions *(in thousands of tons of CO_2 eq.)* [h]	9,386	10,181	10,549	11,272	11,846*
Total indirect GHG emissions *(in thousands of tons of CO_2)* [i]	6,297	8,006	9,085	9,546	9,257*
Total direct and indirect GHG emissions *(in thousands of tons of CO_2 eq.)*	15,683	18,187	19,634	20,818	21,103*

(a) Calculated from base 100 in 2007.

(b) Gases produced (oxygen, nitrogen, argon) calculated in m3 of equivalent gaseous oxygen.

(c) Hydrogen and carbon monoxide.

(d) In kilometers per ton delivered within the framework of the Industrial Merchant business, for oxygen, nitrogen, argon and carbon dioxide.

(e) LHV: Lower Heat Value, which includes the fact that energy from water vaporizing in fuel is not recovered.

(f) Approximately 64,500 GWh LHV.

(g) Representing less than 0.5 one-thousandth of the industrial water consumption of the countries under review.

(h) Includes CO_2 emissions and nitrous oxide emissions.

(i) Total indirect GHG emissions generated by the production of electricity purchased outside the Group. The indirect emissions only concern CO_2 emissions. Calculation takes into account the primary energy source that each country uses to produce electricity (source: International Energy Agency). In addition, in 2013 the Group redefined the calculation method for indirect emissions to take account of all the electricity produced by its cogeneration.

* *Indicator verified by the Statutory Auditors.*

Direct and indirect greenhouse gas emissions and origin of the electricity used

Companies' direct and indirect greenhouse gas emissions are usually divided into three scopes depending on their origin:

- Scope 1 includes direct emissions generated by all possible emission sources owned or controlled by the Group. This scope brings together the Group's production units as well as the transportation of products and equipment to customers and patients;
- Scope 2 is composed of all the indirect emissions related to the 10 types of production units. The indirect emissions are the emissions linked to the production of electricity procured outside the Group;
- Scope 3 encompasses the other indirect emissions generated, for example, by professional travel and commuting or the treatment of products at end of life.

Direct and indirect emissions of Scopes 1 and 2

Direct and indirect emissions of Scopes 1 and 2 represented 99% of the Group's total emissions in 2013.

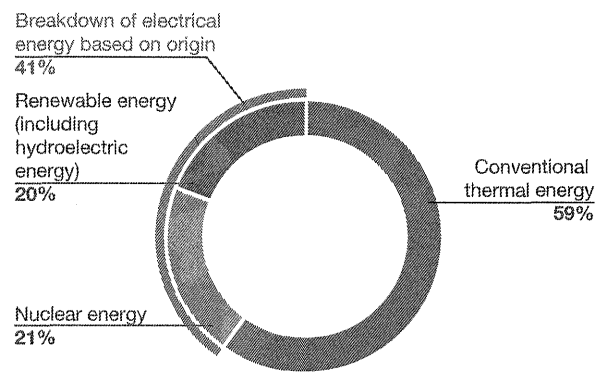
In order to distinguish the differentiated growth dynamics between advanced economies and developing economies, since 2010 Air Liquide has segmented its direct and indirect CO_2 emissions between these economies.

Industrial Consumers 004

Origin of electricity used

Taking into account the different natures of primary energy of the countries where Air Liquide is present, it is possible to present the breakdown of the origin of the electricity used worldwide. The Blue Hydrogen® program is currently the main Group initiative on developing the use of renewable energy (see "Innovation" section of the Reference Document).

Origin of electricity used in 2013 [a]



Energy efficiency of large production units

Created from an invention that considerably reduced the energy used to separate air gases, Air Liquide has always been involved in protecting the environment. **The Group has initiated an approach to steadily reduce the environmental footprint of its activities and contributes to improving that of its partners and customers.** The objective of improving by at least 2% from 2011 to 2015 the energy efficiency of its air separation units, its hydrogen units and the efficiency of liquefied gas deliveries **corresponds to over 280,000 tons a year of direct and indirect CO_2 emissions avoided** [b].

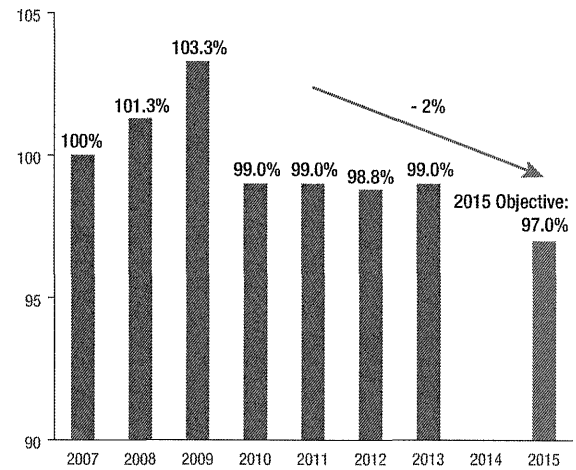
Through its Engineering & Construction entity, the Group designs its own production units. For example, it can adapt the design of these units to the customers' needs, technological developments and energy costs. It directly and rapidly profits from the improvement of these units' energy efficiency. Air Liquide has been operating air separation units and hydrogen units for many years. It therefore benefits from a virtuous circle of steady improvement through **its control of design and operating experience of these units.** Whenever circumstances permit, old units are replaced by new ones that are more energy efficient.

In addition, the Group builds **larger and larger units** that generally provide more efficient energy through scale effects.

Air Liquide has also set up a program to **improve the reliability** of the units' operation. In addition to providing better service to customers, this has direct consequences on **energy efficiency.** Every shutdown and startup of these units creates an energy consumption sequence. Increasing reliability, i.e., reducing the number of excessive shutdowns, results in better energy efficiency in production units.

Large units are often interconnected through a **pipeline system** supplying a customer industrial basin. This group of interlinked units creates a synergy of their operation both for production and energy consumption. The steady development of the Group's oxygen, nitrogen and hydrogen pipeline systems clearly helps improve its energy efficiency. Lastly, ever more efficient **smart technologies** are being rolled out to centrally monitor and run the Group's large units so that **production can be adjusted to customers' needs.** This initiative leads to substantial savings in energy consumption.

Evolution of energy consumption per m^3 of gas produced for air separation units



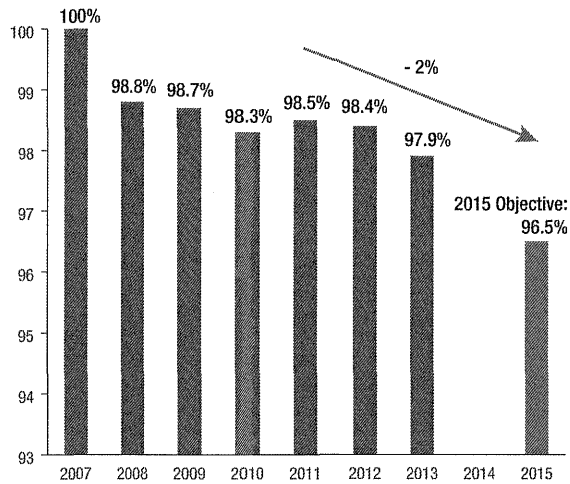
The energy consumption per m^3 of air gas produced, i.e., the **energy efficiency of these units was slightly down in 2013** compared with 2012 and remained close to its best level since 1998.

(a) Calculation takes into account the primary source that each country use to produce electricity (source: International Energy Agency).

(b) Estimate on the basis of CO_2 emissions in 2013.

Industrial Consumers 005

Evolution of energy consumption per m^3 of gas produced for hydrogen and carbon monoxide units



The energy efficiency of hydrogen units improved significantly in 2013 compared with 2012 and reached **the best level ever achieved** by the Group.

Transportation

The gas produced by Air Liquide is mainly supplied via pipeline. Supplying large customers via pipeline from the Group's production units also considerably limits truck transportation. These pipeline systems, which are environmentally friendly and safe, total over **9,200 kilometers worldwide.** For air gases and hydrogen, which represent most of the volumes the Group delivers, **86%** of **deliveries are made via pipeline or through on-site units. As a result, only 14% of all air gases or hydrogen is delivered by truck.**

Industrial Merchant Business Line

In 2013, trucks delivering Air Liquide liquid gases or gas cylinders in the Industrial Merchant business line traveled **420 million kilometers** throughout the world and emitted about **462,000 tons of CO_2.** On-site nitrogen, oxygen and hydrogen units reduced truck deliveries, a source of CO_2 emissions. These on-site units were able to save the **72 million extra kilometers** traveled by trucks and therefore the emission of **72,000 tons of CO_2.**

	2009	2010	2011	2012	2013
Kilometers traveled by all vehicles delivering gas in liquid or cylinder form *(in millions of km)*	363	361	428	428	420*
Estimate of CO_2 emissions generated by these vehicles in the Industrial Merchant business line *(in thousands of tons)*	399	396	471	471	462*
Evolution of the distance traveled per ton of industrial gas delivered (oxygen, nitrogen, argon, carbon dioxide) [a] [b] (truck delivery)	**97.4**	**96.3**	**97.1**	**97.8**	**95.3***
Estimate of truck transport kilometers avoided through on-site customer units *(in millions of km)*	-54	-61	-70	-68	-72
Estimate of CO_2 emissions avoided by these on-site units *(in thousands of tons)*	-58	-66	-70	-68	-72
Percentage of deliveries of air gases and hydrogen via pipeline or on-site	85%	86%	86%	86%	86%

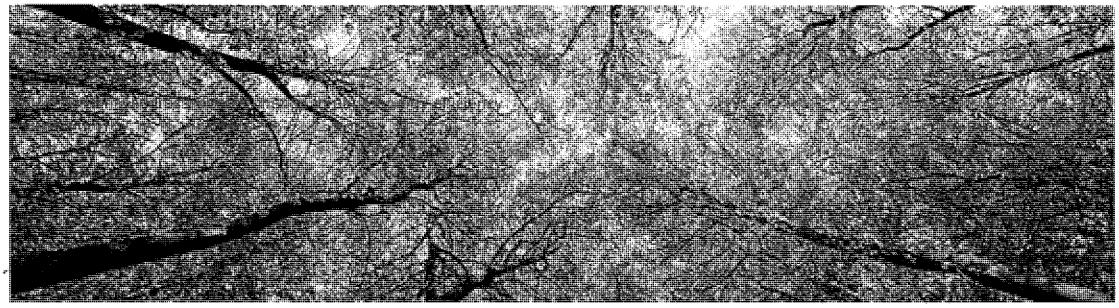
(a) In kilometers per ton delivered for the Industrial Merchant business line.

(b) Calculated from base 100 in 2007.

* *Indicator verified by the Statutory Auditors.*

TAB 2

ARCELORMITTAL



Climate change and energy

Reducing CO2 emissions to manage climate change is an important challenge for ArcelorMittal and the steel industry as a whole. Globally, we are committed to cutting our CO2 emissions by 8 percent per ton of steel produced by 2020. In the USA, we primarily address climate change through energy efficiency projects at our facilities and through product innovation.

Increasing energy efficiency

ArcelorMittal is a major energy consumer, with 15 percent of our conversion cost – the cost to transform raw materials into finished steel products – directly related to energy. In response, ArcelorMittal is fuel switching by using more natural gas in our furnaces, due to the current low prices and high supply, in place of higher priced metallurgical coal or coke. Not only is natural gas more energy efficient, but it is also cleaner and helps to reduce our CO2 emissions. We are working to identify and implement ongoing, innovative solutions to increase the sustainability of operations, reduce greenhouse gas emissions and protect the environment and natural resources, all while saving costs.

Energy management

Our energy strategy is led by a team of focused professionals that includes a manager of continuous improvement, a manager of energy procurement, our USA energy committee and local facility energy champions. The USA energy committee discusses priorities and shares best practices via a monthly conference call. They also meet in person at the Americas energy roundtable, where sites across the region come together to work through barriers and outline successes. Through the efforts of the plant employees and the support of management, 27 energy projects were developed and implemented in 2012 with an energy saving of more than $15.8 million, the equivalent of powering 11,950 homes for a year.

Our electric energy usage is monitored on a daily basis by each facility using a real-time energy usage software. Facilities are able to see their usage and adjust operations appropriately during peak times and seasons, to help minimize impact on the resource and manage internal costs. During the summer of 2012 ArcelorMittal Steelton worked with an energy management company to manage electricity consumption during peak summer hours. For their efforts, ArcelorMittal Steelton won the Keystone State Energy Conservation Award.

Overall in 2012, ArcelorMittal USA reduced energy use by nearly two percent through focused improvements and energy management. In addition, 48.2 percent of the total energy used in steel production at our integrated facilities was generated by capturing and reusing coke oven and blast furnace gas.

In recognition of our efforts, ArcelorMittal USA is the first and only steel company to be recognized as an ENERGY STAR® Partner by the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Energy (DOE). The ENERGY STAR Sustained Excellence Award, presented in 2013, marks our sixth consecutive award, recognizing our continuous growth and accomplishment in energy management and commitment to energy efficiency.

Every ArcelorMittal USA facility plays an important role in energy management, identifying new ways to reduce energy use, costs and emissions. During 2012, ArcelorMittal USA's three integrated facilities – Burns Harbor, Cleveland and Indiana Harbor – our largest and most energy intensive operations, continued to update their 10-year energy roadmaps. Other facilities worked to develop five-year energy roadmaps. These energy roadmaps contain goals and projects designed to enable the plants to attain specific energy reductions. The roadmaps are updated and reviewed annually with the general manager of each facility.

ArcelorMittal

Environmental Policy

ArcelorMittal operates all aspects of modern steelmaking as well as the associated iron ore and coal mining operations. It produces a wide range of flat, long and stainless steel products to meet today's needs in all major customer markets.

Steel is the material of choice for environmental protection; not only is it environmentally friendly but it also outperforms other materials because it is readily recycled.

Environmental excellence, incorporated into all processing activities, is to be promoted by the following principles:

1) Implementation of **environmental management systems** including ISO 14001 certification for all production facilities;
2) **Compliance** with all relevant environmental laws and regulations, and other company commitments;
3) **Continuous improvement** in environmental performance, taking advantage of systematic monitoring and aiming at pollution prevention;
4) Development, improvement and application of low impact, **environmental production methods** taking benefit of locally available raw materials;
5) Development and manufacture of **environmentally friendly products** focusing on their use and subsequent recycling;
6) Efficient use of **natural resources, energy and land**;
7) Management and reduction where technically and economically feasible of the **CO_2 footprint** of steel production;
8) **Employee commitment** and responsibility in environmental performance;
9) **Supplier and contractor awareness** and respect of ArcelorMittal's environmental policy;
10) **Open communication** and dialogue with all stakeholders affected by ArcelorMittal's operations.

Lakshmi N. Mittal
President of the Board of Directors and CEO

Aditya Mittal
CFO and member of the GMB

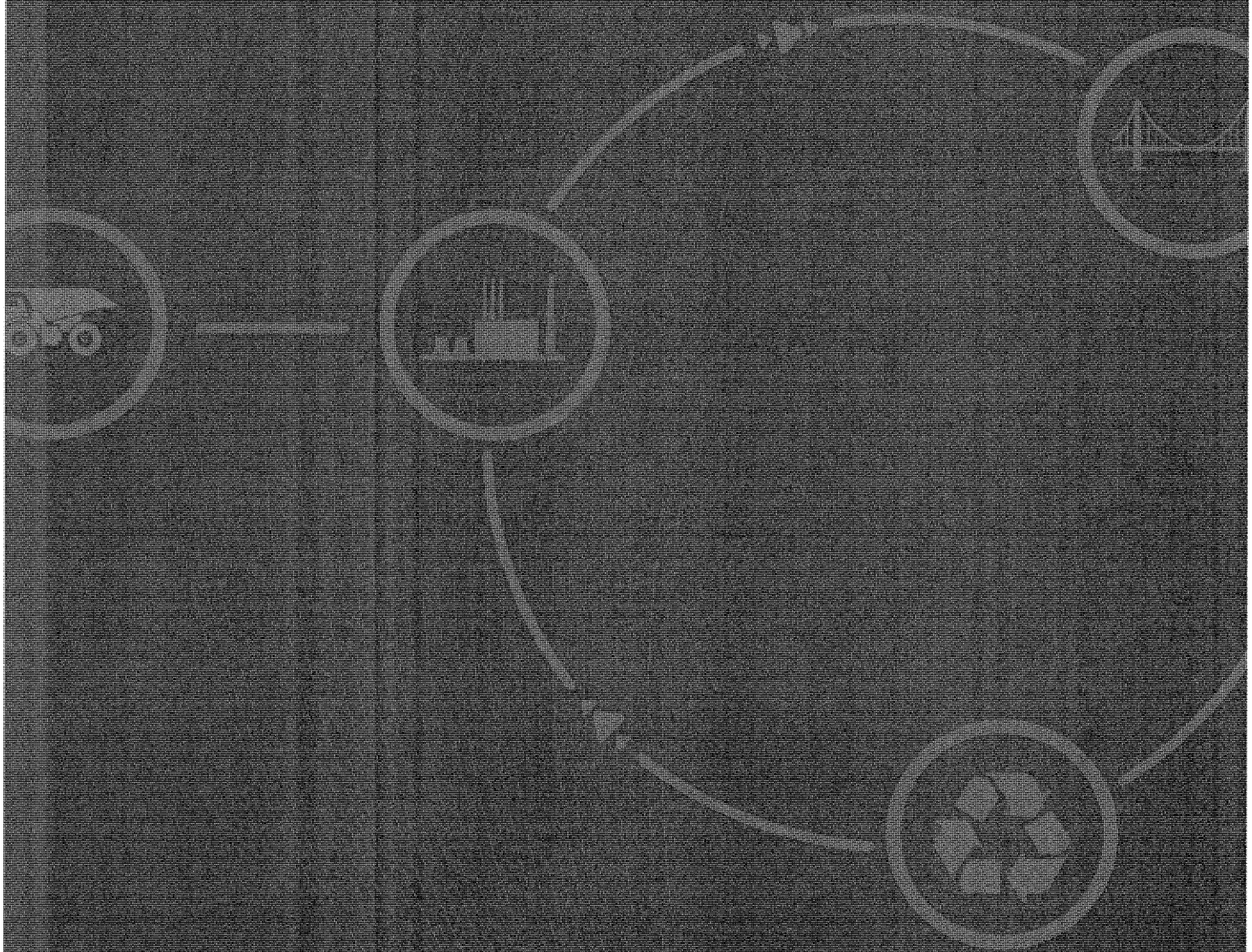
Malay Mukherjee
Member of the GMB

Gonzalo Urquijo
Member of the GMB

Michel Wurth
Member of the GMB

Steel: stakeholder value at every stage

Corporate responsibility 2013



ArcelorMittal

Natural resource efficiency
Continued

most importantly, concentrating the extracted minerals. Some of our mines, such as the El Volcan mines in Mexico, use special thickeners to avoid the use of tailings ponds, and are therefore much more efficient in water use.

ArcelorMittal also has an important contribution to make to bringing clean water supplies to populations in an ever-urbanising world. Since 2010, we have been working on a project that will supply water to two million people in Argentina. The Northern Buenos Aires Water Purification System is the largest water purification plant in Argentina, and our Acindar facility has supplied over 16,000 tons of steel to the project, providing solutions and consulting to tailor products to customer needs.

Energy use

Reducing our energy footprint is one of our top priorities. Energy is a significant cost to the business and is becoming increasingly expensive in many world markets. It is also directly linked to our carbon footprint.

Overall in our steelmaking business, we expect to achieve energy savings of $200m annually by 2020, compared with 2007, which is the equivalent of 1.6 million tonnes of CO_2 a year. This target complements, but is not equivalent to, our group CO_2 target. We made savings of some $264m from energy gains in 2013.

We have an energy manager at every plant, supported by a network of technical energy professionals, procurement experts specialising in energy purchasing, and R&D specialists.

Our experience shows that energy efficiency improvements can come from any combination of organisational change (which includes applying the same energy management standards across the whole business), behavioural change (such as information sharing and training), and technical advances (such as new investments, and incorporating international best practice).

After we published our energy policy in 2008, we developed a framework of good practice in energy management which is compatible with energy management standard ISO 50001. In 2013, two further European sites were certified to this standard, bringing the total to five, in preparation for compliance with the European energy efficiency directive EU/2012/27.

Our R&D teams support our site managers to identify new opportunities to cut energy use, and implement them as efficiently and quickly as possible, often using new technology. We share these ideas across the whole company, and benchmark our overall performance against the most energy-efficient steel companies.

Nine R&D projects aimed at energy efficiency within our production processes were rolled-out to our production facilities in 2013.

We run a number of energy saving initiatives, tailored to suit each business type and region. For example, our United States sites have committed to reducing the energy intensity of 17 plants by 10% through an energy efficiency training programme, in partnership with the US Department of Energy.

At our European steel plants that produce 'long steel' products such as bars and beams, we have been running a Continuous Improvement Challenge. This was designed to encourage bold ideas that could reduce our gas consumption without requiring capital expenditure. Our Gandrange plant in France, for example, is now best-in-class for gas consumption in 2013, after fine-tuning its new reheating furnace, training plant operators and seeking new ideas from shop floor employees. As a result, the plant saved a total of $470,000 during the year.

At our European sites producing 'flat steel' products (such as car doors and roofing), the Energise initiative introduced in 2011 has been particularly successful. A team of experts have been working across these plants in our European business, with the aim of identifying projects that could substantially cut energy use without major capital investment. They have looked in detail at how much energy is used at each and every stage of the production process. Each site can now draw on a database of ideas and experiences from other sites, which is being updated all the time.

Energise aims to reduce our energy use per tonne of steel by 9% over the four year programme to 2016. We project this will cut our energy costs by 10% over the same period. We estimate that over 70% of this will be achieved through energy efficiency measures; around half of these will either have no cost, or a payback of less than three years. By the end of 2013, we had achieved a 3.4% reduction in energy use per tonne, providing savings of over €100 million since 2011.

One key area will be the use of energy-rich gas by-products to generate electricity, which can either power our own plants or be sold. The financial and non-financial savings from Energise interventions are reported on a quarterly basis. In 2014, with the creation of a single European segment within our steel business, we will plan a roll-out of the Energise approach across the region, initiating the programme at two new sites.

"For me, Energise is one of the best programmes applicable across our facilities – I see immediate results."

Manfred Van Vlierberghe, CEO Poland

"Introducing savings is relatively easy. Sustaining these savings can be quite difficult especially if it is achieved by changing human behaviour. You need to incorporate it in your management infrastructure and implement a system such as ISO 50001 to entrench and sustain such savings."

Dhesan Moodley, general manager, Saldanha Works

Natural resource efficiency Continued

In April 2013, our Saldanha plant in South Africa – the single largest electricity consumer in the Western Cape – announced that its energy saving programme has saved 6.6% savings in its annual energy consumption, resulting in an astounding $9.3 million energy bill savings in the first year. The project was the product of an energy management strategy that was launched in 2010. Initially, potential savings were identified through an energy audit and an examination of its existing project list. The plant then initiated an ISO 50001-compliant energy management system in order to sustain the efficiencies achieved.

In our mining operations, we started to capture coal-bed methane gases at our Lenina mine in Kazakhstan in 2012. We use the gas to generate electricity and remove potentially dangerous methane from the mine.

Capital expenditure on energy-related projects usually needs to demonstrate a payback of under three years. In 2013, we spent $23 million on such projects. For example, $8.3 million was spent on energy upgrades at our Dofasco site in Hamilton, Canada. The site is anticipated to save 5% a year in energy costs as a result of this investment.

Renewable energy

We also install renewable energy systems to generate on-site electricity where it is financially and technically possible. Whilst we cannot use wind and solar energy exclusively at our steel plants – because we need a constant supply 24 hours a day – such low-carbon forms of electricity can make a contribution.

For example, we are developing a wind farm at Saldanha in South Africa to provide electricity to our steel plant, which we expect to come on-line in 2014. We have also submitted a planning application for a solar farm of photovoltaic panels at Fos-sur-mer in France, and use hydro-electric power in Canada and Brazil.

In 2013, Lázaro Cárdenas in Mexico consumed more than 225,000 MWh of wind energy, representing approximately seven per cent of the total electricity consumption of our steel operations there. This represents a reduction in CO_2 emissions of more than 110,000 tonnes. There are plans in place to increase the share of our electricity sourced from wind power to 30% in 2014.

Case study: Waste into by-products

For years, the ceramic bricks used to line steel vessels have ended up in landfills or been stored on site at steelmaking facilities without a clear plan on how to dispose of them. Now our plants in the United States are innovating ways to recycle these spent "refractories" in a bid to reach zero-landfill status in their steelmaking.

Defined as non-metallic materials that retain their strength at high temperatures, refractories in the case of steelmaking are bricks of ceramic material that are used to line steel vessels and ladles without interfering with the steelmaking process. For years, steelmaking refractories have ended up in landfills or been stored on site at steelmaking facilities without a clear plan on how to dispose of them.

The recycling of these bricks brings benefits not only to the steel industry, but also to others. With proper segregation and handling, spent steelmaking refractories can become raw materials for refractory products, powder coating applications, metallurgical additives, slag conditioners and feedstock for ordinary cement. This recycling programme will also cut down on the transportation costs involved in moving used refractory materials and provide extra revenue.

Refractories are used in many different parts of the steelmaking process, and each source has special considerations. For example, those from the basic oxygen furnace that converts iron into steel is relatively pure, but little is generated. Steelmaking ladles, on the other hand, generate a lot of by-product, but they contain materials that need to be separated.

In 2012, ArcelorMittal Burns Harbor recovered nearly 4,000 tonnes of refractory material – from ladles and vessels, as well as slide gates. These are already being reused at our sites in Riverdale, Burns Harbour and Cleveland. Trials are planned for other refractory materials at our flat and long steelmaking facilities in Indiana Harbour in 2014, and our long steel plants at Steelton and Lapplace plants will also plan future trials.

Refractory recycling is nothing new, and yet its practice could still be expanded to other sites. There are two main barriers to the development of this type of practice. Firstly, the market for this type of recycling is not fully developed. Secondly, the different kinds of refractories have to be correctly segregated in such a way that they can be selectively recovered for recycling. Once different kinds of refractory materials are mixed, they become impossible to recycle.

Refractories were designed for the steelmaking industry, so it takes some innovative thinking – as our sites in the United States found – to advance this contribution to making steel a fully sustainable product. Following a series of seminars across our US sites to share best practice on the recycling of refractory materials, ArcelorMittal established a zero waste target in 2013 across its sites.

Capturing Waste Gas: Saves Energy, Lowers Costs

ArcelorMittal's Indiana Harbor plant in East Chicago, Indiana, is the largest steel mill in the Western Hemisphere. It operates five blast furnaces, including the largest in the United States, known as the No. 7 Blast Furnace. These furnaces transform iron ore, coke, limestone, and scrap into more than 9.5 million tons of high-quality steels each year, including hot-rolled, cold-rolled, and hot-dipped galvanized sheet products serving automotive, appliance, agricultural, and construction applications. Blast furnace gas (BFG) is a byproduct of this steelmaking process.

ArcelorMittal's Indiana Harbor plant covers 3,100 acres crossing the Indiana Harbor canal on the southern shore of Lake Michigan in East Chicago, Indiana.
Photo courtesy of ArcelorMittal

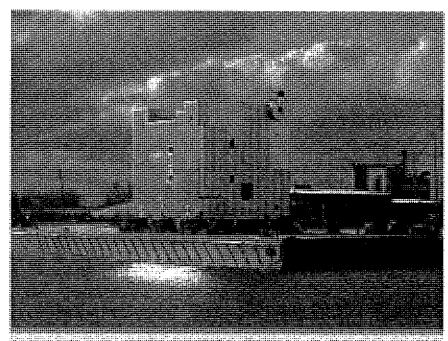
Flare Capture Boiler Creates Reliable, Useful Energy

BFG has a very low heating value—about 100 Btu/cubic foot, or one-tenth the heating value of natural gas. BFG from the No. 7 Blast Furnace had been used as the primary fuel for three boilers at the No. 5 Boiler House. However, the existing boilers could not consume all the BFG—22% was wasted when it was flared into the atmosphere through an exhaust stack.

Prior to the installation of the energy recovery boiler, 46 billion cubic feet of BFG was flared into the atmosphere each year. *Photo courtesy of ArcelorMittal*

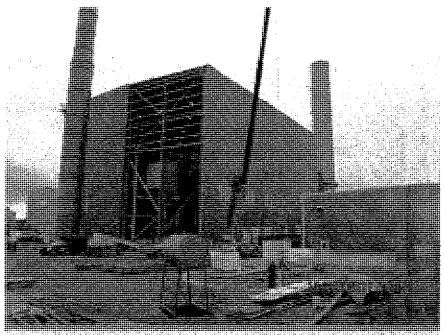
Committed to the efficient use and conservation of energy, ArcelorMittal's Energy Team at Indiana Harbor performed benchmark studies comparing the Indiana Harbor plant to the best practices for energy performance at other ArcelorMittal facilities. The BFG flare rate from the No. 7 Blast Furnace at Indiana Harbor was the highest of all ArcelorMittal's USA facilities. The Energy Team determined that capturing the waste BFG and converting it to electricity would be a cost effective way to improve the facility's energy efficiency.

In June 2009, ArcelorMittal learned about the potential to receive a 50% cost-matching grant from the American Recovery and Reinvestment Act administered by the U.S. Department of Energy (DOE). ArcelorMittal applied for the competitive grant and, in November, received $31.6 million as a DOE cost-sharing award. By matching the federal funding, ArcelorMittal was able to construct a new, high efficiency Energy Recovery & Reuse 504 Boiler and supporting infrastructure. The boiler, which weighs over one million pounds, was built in Buffalo, New York, and then transported to East Chicago, Indiana.



The boiler was shipped by truck and a lake freighter on the Buffalo River to the Indiana Harbor facility.
Photo courtesy of ArcelorMittal

To accommodate the boiler on site, a new 17,000-square-foot boiler house and 290-foot exhaust stack were constructed. Nearly 620 feet of new 66-inch pipe was installed to carry the BFG to the boiler. A feedwater economizer and combustion air preheater were installed to remove waste heat from exhaust gases and improve the boiler efficiency. Draft fans, feedwater pumps, and a deaerator were also constructed to support the operation.



The boiler weighs over 1 million pounds and is kept in a 17,000-square-foot boiler house along with supporting equipment.
Photo courtesy of ArcelorMittal

High Efficiency Boiler Uses BFG for Steam, Power

The boiler was connected to the high-pressure steam system at the No. 5 Boiler House in September 2012. The boiler's 88% efficiency enables it to produce 350,000 pounds per hour of steam from about 490 MMBtu per hour of previously wasted BFG. The steam drives existing turbo-generators at the facility to generate electricity. The electricity is used on site and displaces power generated by the local electric utility from primarily coal-fired power plants. This reliable source of power reduces the plant's exposure to energy price fluctuations. Internal power generation has increased, and purchased power costs have been reduced, thus improving competitiveness of the facility. The project was awarded "Best Operational Improvement" for 2012 by American Metal Market.

Estimated Annual Benefits

Energy Savings	4.6 trillion Btu
Cost Savings	Nearly $20 million, effectively lowering steel production costs by $5 per ton
Emissions Reductions	340,000 tons of carbon dioxide, equivalent to taking 62,000 cars off the road
Electricity Generation	38 megawatts of power, equivalent to 333,000 megawatt hours, which is enough to supply electricity to 30,000 homes

Job Creation and Retention

Approximately 500 jobs (included 200 local trades) were created during the project's construction, installation, and operation. Most of the jobs were created in the manufacturing and construction industries. More than 175 workers were on site daily at the peak of construction. The project also supported the retention of nearly 5,900 direct and 26,800 indirect jobs at the Indiana Harbor steel mill. Wendell Carter, Vice President and General Manager at ArcelorMittal Indiana Harbor said, "Investments such as the DOE funding ensure the sustainability of steelmaking in Northwest Indiana, while supporting our commitments to energy efficiency and superior environmental performance."

> "This is a good example of high efficiency manufacturing technology, thoughtfully executed, and is everything the Recovery Act was meant to be. Now instead of exhausting and flaring nearly 5 trillion Btu of BFG annually, we can harvest it and make electricity."
>
> – Dr. Robert W. Ivester,
> Acting Program Director,
> Advanced Manufacturing Office,
> U.S. Department of Energy

Recognition for Sustained Excellence

DOE and The U.S. Environmental Protection Agency (EPA) presented ArcelorMittal USA with an ENERGY STAR® Award in March 2013. ArcelorMittal USA received the highest award, ENERGY STAR® Partner of the Year – Sustained Excellence, "for its commitment to identifying and implementing innovative solutions to increase the sustainability of its operations, reduce greenhouse gas emissions, protect the environment and natural resources, while saving energy and costs."[1] The new energy recovery boiler was one of the key accomplishments that earned ArcelorMittal USA the award.

1 *"ArcelorMittal USA." ENERGY STAR® Awards, ENERGY STAR® website.*

U.S. DEPARTMENT OF ENERGY
Energy Efficiency & Renewable Energy

For more information, visit:
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TAB 3

ALLISON TRANSMISSION, INC.

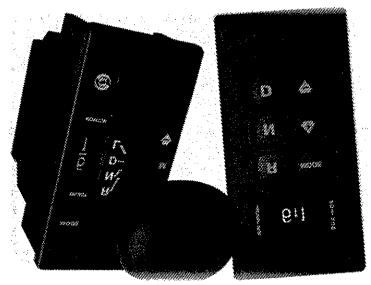
Environmental Sustainability
Allison Transmission February 2014

In 1915, James A. Allison founded what would become the company that still bears his name today. Innovative Allison engineers, designers and manufacturers began building racecars, evolved to developing aircraft engines and then introduced the world to heavy-duty automatic transmissions. Today, Allison Transmission is the largest designer, developer, manufacturer and distributor of medium- and heavy-duty fully automatic transmissions and hybrid propulsion systems in the world.

As a responsible corporate citizen, Allison Transmission, Inc. is dedicated to protecting human health, natural resources and the local and global environment. This dedication reaches further than compliance with the law to encompass the integration of sound environmental practices into our business decisions. This Policy is based on the integration of risk-based cost-effective management practices into site activities, with the aim of continually improving environmental performance.

At Allison Transmission, our innovative technologies, landfill-free manufacturing processes and industry-leading products are all working toward benefiting the environment – across the globe.

Our Products - Fuel Utilization



To get the most benefit out of every drop of fuel, Allison Transmission's sophisticated 5th Generation Electronic Controls offer an enhanced array of smart controls designed to improve fuel economy and overall vehicle efficiency. New 5th Gen Controls include a new Transmission Control Module (TCM), shift selector hardware, advanced software and calibrations along with diagnostics and prognostics capability.

Invented to match the new generation of global vehicle electrical-electronic architectures, Allison easily integrates these controls during the vehicle's assembly process. The flexibility of these innovative controls provides optimal shift strategies to maintain appropriate balance between performance and fuel economy.

Allison is also the preferred transmission for alternative fuel applications. With the ever-increasing appeal of natural gas, more fleet owners are specifying Allison Automatics for their natural gas-powered vehicles to reduce emissions and lower noise.

Hybrids

It's estimated that the Allison H40/50 transit bus hybrid propulsion system has saved more than 32 million gallons of diesel fuel and prevented 316,000 metric tons of carbon dioxide from being emitted into the atmosphere.

Our Facilities

In addition to our products, we believe in doing our part to be responsible corporate citizens with our facilities and manufacturing processes. That's why we've implemented a range of eco-friendly efforts and projects that include the following:

- Ten percent of the power used at our Indianapolis campus is derived from green power – equal to eliminating greenhouse gas emissions from 3,000 automobiles for one year
- Energy-efficient lighting
- Energy-efficient electric motors
- Occupancy sensors
- Low- to no-flow restroom fixtures
- Centralized recycling stations in every plant
- Targeted removal of hazardous waste, including cyanide and aerosol cans
- Outfall isolation valves
- Landfill-free status
- Solar/wind turbine lighting in parking lots
- Pervious paving
- Reflective roofs which reduce energy consumption
- Energy-efficient integrated window shields with building heating and cooling systems

The following projects are evidence of our continuous commitment on sustainability through ongoing efforts to reduce ATI's environmental impact by all types of wastes, lowering the demand for water and decreasing electricity consumption.

Project 1: Waste Reduction
The purpose of Allison's comprehensive waste management program is to maintain the landfill-free status achieved in 2009. The waste management program promotes the recycling of multiple waste streams including beverage containers, wood, cardboard, scrap metal, and oil. These recycling efforts reduce the amount of waste sent to the waste to energy facility and reduce the consumption of natural resources that would otherwise be needed.

In 2013 the following volumes of materials were recycled:

- Beverage containers – 9.77 tons (over half a million empty cans)
- Wooden pallets – 232 tons (roughly 15,481 pallets)
- Scrap wood – 2.2 tons (recycled as mulch)
- Cardboard – 200 tons
- Scrap metal – 8,924.9 tons
- Used oil – 724 tons (over 3,600 barrels)

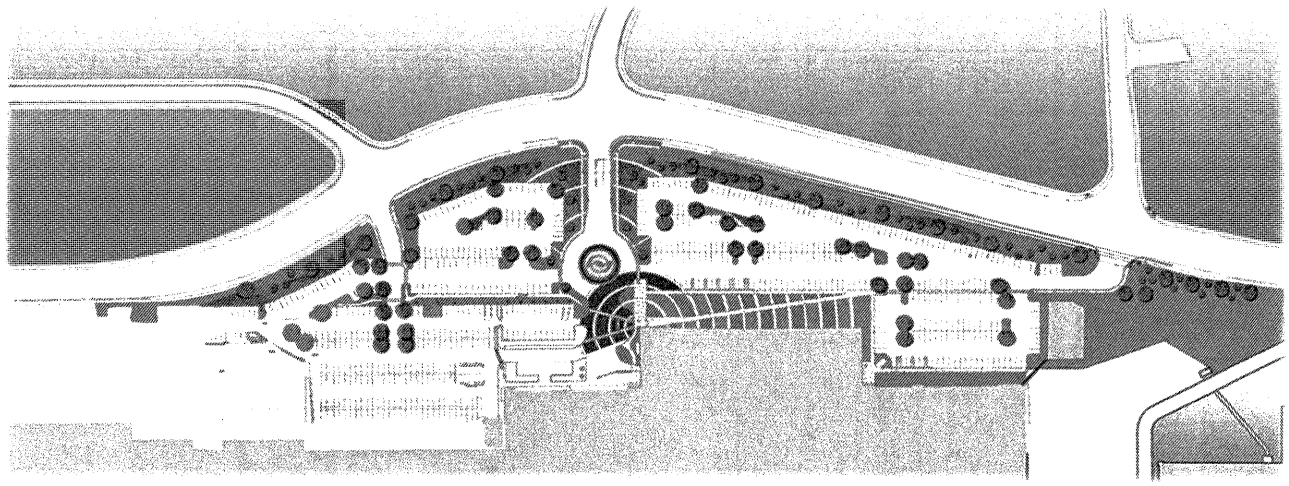
<u>Example 1: Boxes on Skids</u>
Allison contracted Waste Management to assist with waste reduction and recycling efforts for all Indianapolis facilities. One of the waste streams that have been a continual burden for Allison is cardboard boxes that are attached to skids. Historically, there was no recycling vendor that would be willing to take this waste stream and all of this was sent to the Indianapolis Resource Recovery Facility. Waste Management contacted several potential vendors to locate someone with interest in recycling or reusing these items. In 2013, Waste Management identified Rays Recycling as a potential collector for these items. Rays began collecting the waste stream from

the main warehouse facility. Personnel at the warehouse were informed of the new process and where to take the items for pick-up. After successful implementation at the warehouse, collection was implemented at a second satellite facility. Completion of this project reduced the waste stream of the facility and allowed for beneficial reuse of a mixed recyclables waste stream.

Example 2: Construction Waste

Waste reduction initiatives are evaluated and implemented during Facility refurbishment activities in order to minimize waste generation. Allison Transmission's main campus has ~200 acres of property, ~3.2 million square feet of which are under roof. When asphalt and soil are removed, it could be classified as hazardous waste with hefty disposal costs. Allison's goals for refurbishment activities are to minimize wastes throughout the project. This is especially challenging for a facility that is nearly 100 years old. Allison reused asphalt and soil from two 2013 refurbishment projects as follows:

- North Parking lot: During the renovations, 3,456 tons of asphalt were milled and re-used.
- CSO Upgrades: During the separation of sanitary and storm water project, 20,000 tons of soil were removed during excavation for the additional piping. All of this soil will be utilized as landscaped berms for continued beautification efforts on the main campus.



These examples served as cost avoidances for both disposal costs and fill expenses.

Project 2: Water Conservation

Allison continually works with the Town of Speedway to improve water conservation. 2013 efforts lowered city water usage by more than 25 million gallons. Examples of water conservation measures used are:

- Improved operational control of city water usage
- Reduced pumpouts of machine sumps utilizing water based coolants
- Streamlining the process of identifying excessive usage and correcting
- Continual Facility upgrades

Environmental Sustainability
Allison Transmission February 2014

Project 3: Energy Usage

Allison is implementing the latest innovations in lighting solutions as part of our ongoing efforts for sustainable energy usage. In October 2012, Allison enrolled the main campus electric service into IPL's Green Power Option with a reduction goal of 10% or 17,000 MWh annually. Allison implemented the following programs to reduce energy usage:

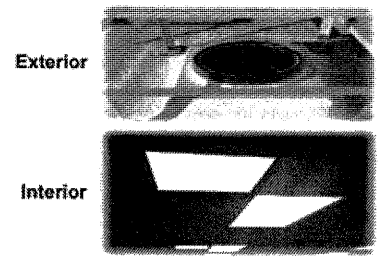
- Lighting Retrofit Projects that utilized energy efficient lighting along with smart panels to integrate the lights with occupancy sensors and timers. These 2013 projects include meeting rooms, restrooms, and storage rooms.
- Refurbished offices were equipped with daylight harvesting to take advantage of available daylight to augment electric lighting systems. Dimming ballasts and photoreceptors reduce electric lighting loads proportional to the amount of daylight that enters the space. The more usable daylight entering the space, the more the electric lights can be dimmed, resulting in significant energy savings.
- Solar / wind powered lights were installed in the North parking lot. These lights are "off the grid" meaning they are powered solely by wind and sun light (no electrical lines).

Additional energy usage improvements include:

- Improved management control of end of shift and weekend shutdowns of machinery and lights.
- Reducing the amount of compressed air used in the main campus by 15%, through a collaborative effort from Powerhouse and Plant Operations.

These measures resulted in reduced energy usage by 15.8 million kWh for 2013.

Solar and Wind Powered Street Lights
Completely "Off the Grid"



Plant 12 "Daylight Harvesting" utilizing natural light to augment electrical lighting systems

Project 4: Chemical Reduction

For 2013, Allison set a lofty goal to achieve a 20% reduction in chemical usage. The biggest challenge for achievement of this goal is education and communication. While we did not reach our goal, we did reduce chemical usage by 15% for a total reduction of nearly 65,000 gallons for the Main Campus. These reductions were achieved through the following efforts:

- Utilization of electronic monitoring of machine lubricants. Electronic monitoring allows Operations to identify the top oil users and implement improvements to reduce usage.

- Chemical control processes were utilized to reduce pumpouts of metal removal fluids, extend fluid life which factors into the overall chemical usage reduction.

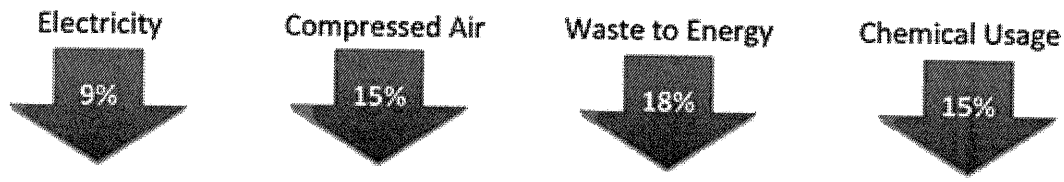
Project 5: Air Emissions Reductions

Allison continues to reduce overall air emissions through the systematic upgrades of diesel powered engine driven test cells where applicable. Allison has 45 test stands and 80 engines at the Indianapolis facilities for transmission testing. As of 2013, 13 engines are model year 2013 or newer, 33 engines are EPA certified, and 5 new engines were purchased in 2013. Every engine is maintained under a strict engine maintenance and filter change schedule.

Allison's goal is to use newer, EPA certified engines, as long as the engine will meet the specifications for our transmission testing requirements. Six Transmission Test Stands are subject to the National Emission Standards for Hazardous Air Pollutants for Reciprocating Combustion Engines. In 2013, Allison installed the first control system required by this rule on one of the test stands at Plant 15. The goal of the emissions controls system was to achieve a 70% reduction in carbon monoxide emissions. The initial performance test was conducted in October of 2013 and revealed a 77% reduction in emissions. Although the emission reductions goal was met, Allison has had a few trials with the system. The first issue encountered was finding a vendor that would accept the challenge. The system is very unique and most companies did not believe it would be feasible or achievable to install controls that would meet the emission reduction goal. Only one vendor rose to the challenge, and their oxidation catalyst system was purchased and installed in time to meet the May 3, 2013, compliance deadline. After installation, the next hurdle was to overcome operating issues and install failsafes to prevent loss of data from the continuous parameter monitoring system. This was the first such endeavor for Allison and there were many lessons learned throughout the process. The enhanced monitoring system was installed in December 2013. The knowledge from this project is already being used to improve the process and implementation of similar systems for four other transmission test stands. These four systems are scheduled to come into compliance with the same standard by May 3, 2014.

In Closing

All of these efforts have resulted in the following overall reductions for calendar year 2013:



Allison Transmission, Inc. is very proud of these accomplishments to proactively work toward protecting the environment. Being good stewards of our facilities and products is just another example of our commitment to global corporate citizenship.

Allison Transmission, Inc. – Indianapolis Operations
Environmental Policy

As a responsible corporate citizen, Allison Transmission, Inc. is dedicated to protecting human health, natural resources and the local and global environment. This dedication reaches further than compliance with the law to encompass the integration of sound environmental practices into our business decisions. This Policy is based on the integration of risk-based cost-effective management practices into site activities, with the aim of continually improving environmental performance.

Allison Transmission, Inc. is committed to assess the direct and indirect environmental aspects of its activities, products and services to establish appropriate objectives, targets, and environmental management programs.

In particular, Allison Transmission, Inc. will strive to achieve the following objectives through continued execution of our Environmental Management System:

1. Comply with all applicable environmental laws and regulations, and other requirements to which we subscribe.

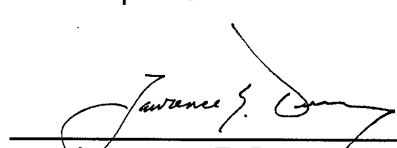
2. Assign management responsibility for the environmental activities and services provided in all departments and ensure that all employees are aware of their individual responsibilities for acting in accordance with this policy.

3. Practice and promote effective pollution prevention in accordance with a hierarchy giving top priority to waste prevention at the source, elimination or reduction of wasteful practices, and recycling.

4. Maintain good communications with our local community and concerned stakeholders, including legislators, regulators and other organizations with an interest in our environmental performance.

In accordance with our Environmental Management System requirements, the Allison Transmission, Inc. objectives and targets will be reviewed periodically to assess progress toward continuous improvement. This policy statement will be made available to Allison Transmission, Inc. employees and the public.

Signed by:

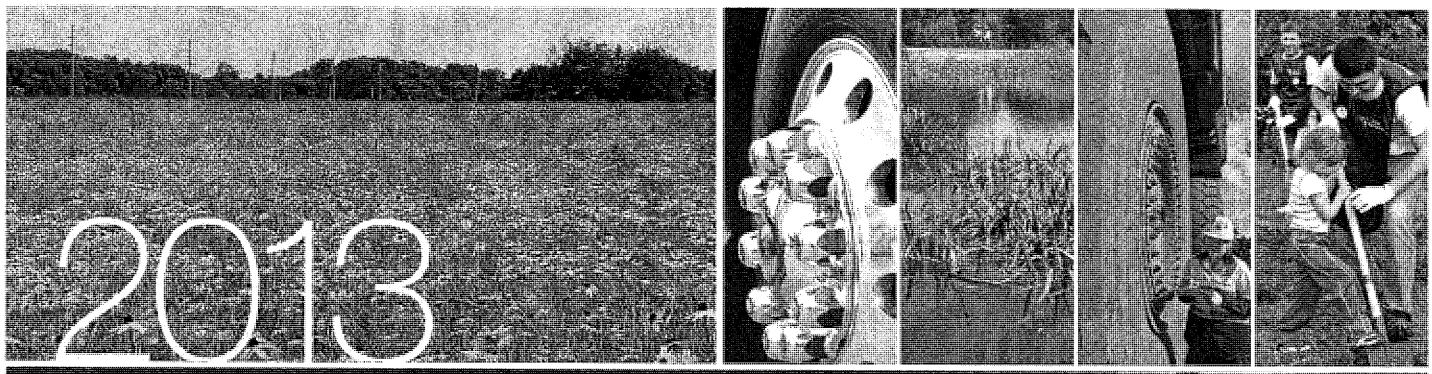


Lawrence E. Dewey, CEO
Allison Transmission, Inc.

Issue Date: 9/7/2000
Revision Date: 9/12/2007

TAB 4

ALCOA

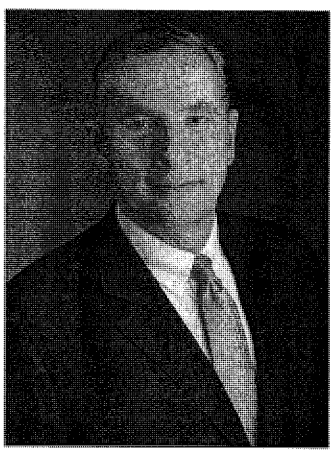


Sustainability at a Glance

ALCOA

2013 SUSTAINABILITY HIGHLIGHTS

- We reduced our absolute greenhouse gas emissions by 3.1 million metric tons, or 7%.
- We had zero employee and contractor fatalities, and we reduced our days away, restricted, and transfer (DART) rate by 30% to 0.35.
- We introduced Alcoa 951 bonding technology, which is "aluminizing" the ground transportation industry.
- We rated 78% of our key suppliers as either leading or active in regards to their sustainability programs.
- Alcoa and Alcoa Foundation invested US$40.9 million in community programs, and a record 62% of our employees volunteered in their communities during our Worldwide Month of Service.
- We were included in the Dow Jones Sustainability Indexes for the twelfth consecutive year and again recognized as the global sustainability leader for the aluminum industry.



"For more than 125 years, Alcoa has delivered the sustainable solutions the world needs, with innovations that set us apart as a true leader. We are growing in the areas the world needs most, meeting ever-increasing demands for lightweighting in automotive, commercial transportation, and aerospace, and for energy-efficient buildings."

Klaus Kleinfeld
Alcoa Chairman and Chief Executive Officer

SCAN TO READ the full Chairman & CEO Statement.

MATERIAL ASPECTS

Material aspects are a company's most significant economic, environmental, and social impacts.

Using stakeholder input in accordance with the Global Reporting Initiative's G4 guidelines, we identified our material aspects as greenhouse gas emissions, energy, health and safety, economic performance, environmental footprint (emissions & waste), local communities, and biodiversity.

ALCOA PRODUCTS AND MATERIALS ARE ESSENTIAL FOR THE INDUSTRIAL ECOSYSTEM

- We were the first aluminum company to receive the Cradle to Cradle Certified℠ designation, which is a multi-attribute eco-label that assesses a product's safety to humans and potential impact on the natural environment.
- For the next generation of short-range aircraft, we have developed new alloys and technologies that can lower the weight of the plane by up to 10% versus composite-intensive planes.
- Automakers are incorporating more aluminum to deliver lighter weight vehicles and improve fuel economy while meeting durability, safety, and performance requirements.
- Our new 18-kilogram (40-pound) Ultra ONE™ heavy duty truck wheel is 47% lighter than steel wheels of the same size.
- With a 76% global recycling rate, the aluminum can is the most recycled beverage container in the world and one of the most sustainable solutions for eliminating packaging waste.
- We are the world's leading producer of blades and vanes made of advanced nickel-based superalloys for the high-temperature environments in jet engines and industrial gas turbines.
- We manufacture a wide array of aluminum doors, framing systems, curtain walls, and windows that help make buildings greener.

Improving Our Products

Through their light weight, high strength, durability, and recyclability, our products are inherently sustainable and improve the sustainability of our customers' products.

PRODUCT DESIGN & LIFE CYCLE

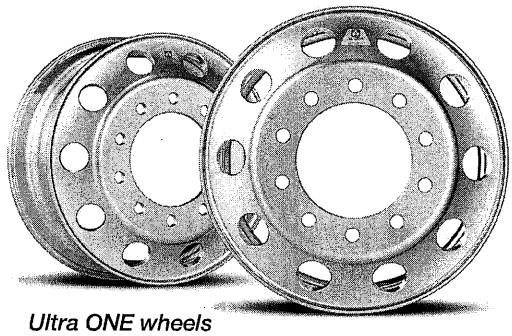
We were the first aluminum company to receive the Cradle to Cradle Certified℠ designation. We currently hold Silver certification for our primary metal, forged aluminum truck wheels, lithographic sheet, can sheet, aluminum bottle stock, and four product lines from our Kawneer architectural systems business.

TRANSPORTATION

Aluminum is the ideal material for transportation applications, helping reduce the overall weight of an aircraft, automobile, or commercial vehicle to improve fuel economy and significantly reduce emissions during the vehicle use phase.

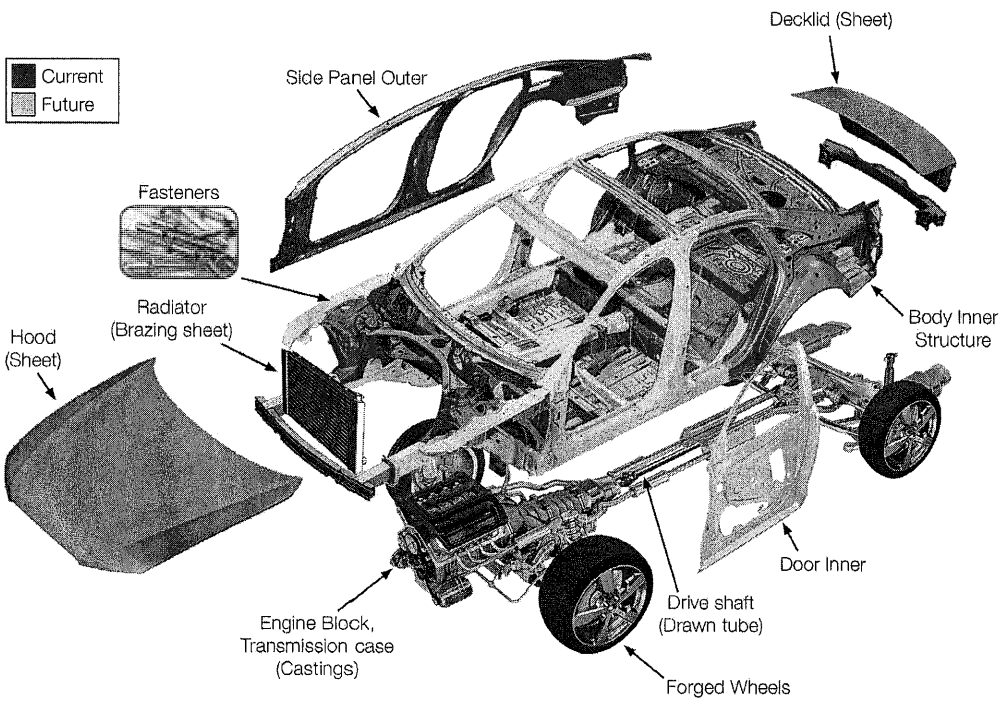
In response to growing consumer demand for more fuel-efficient cars, increasing fuel prices, and stricter government emission regulations, automakers are incorporating more aluminum to deliver lighter weight vehicles while meeting durability, safety, and performance requirements. The mass production of aluminum-intensive vehicles is significantly enabled by Alcoa 951 bonding technology, which we introduced commercially in 2013.

The commercial transportation industry is also facing stricter government regulations for vehicle fuel efficiency and emissions. Our portfolio of aluminum sheet, extrusions, and wheel products can be used to replace heavier metals for many truck components. For example, our new 18-kilogram (40-pound) Ultra ONE™ heavy duty truck wheel is 47% lighter than steel wheels of the same size.



Ultra ONE wheels

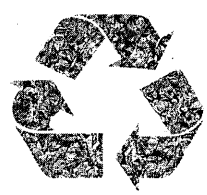
Aluminum Applications on Automobiles



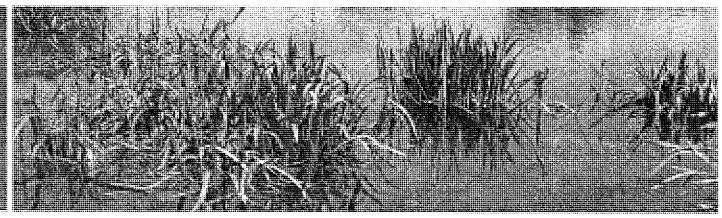
PACKAGING

We produce aluminum rigid container sheet for the packaging products market. Our customers use our sheet to manufacture beverage and food cans for the beer, soft drink, juice, isotonic beverage, energy drink, packaged water, food, and pet food industries.

We operate the largest can reclamation facility in the world in Alcoa, Tennessee, USA. This facility re-melts enough used beverage containers to make billions of new aluminum cans each year.



Protecting Our Resources



Efficient use of resources, such as water and energy, and effective control of emissions, waste, and land use have positioned us as an industry leader in minimizing our environmental footprint.

CLIMATE PROTECTION

MATERIAL ASPECT

Our goal is to reduce 2005 levels of total carbon dioxide equivalent (CO2e) intensity in our Global Primary Products business (refining and smelting) by 30% by 2020 and 35% by 2030. Carbon dioxide is our largest component of greenhouse gases (GHGs).

Between 2005 and 2013, we reduced the GHG emission intensity of our Global Primary Products business by 25.5%. We reduced our absolute GHG emissions by 3.1 million metric tons from 2012 to 2013, and our total 2013 GHG emissions (CO_2 equivalents) equaled 43.4 million metric tons.

Global Primary Products Greenhouse Gas Emission Intensity

Metric tons of CO_2 equivalents per ton of production

	Refining	Smelting	Total
2005 Baseline	0.63	9.22	10.42
2012	0.57	6.88	7.97
2013	0.57	6.67	7.76
Reduction from Baseline	9.5%	27.7%	25.5%
2020 Goal			7.29 (30%)
2030 Goal			6.77 (35%)

Goal: 30% reduction Progress: As of Dec. 2013 ↓25.5%

The total represents the combined impact of refining and smelting operations indexed to metric tons of primary metal production (refining is included at a ratio of 1.9 metric tons of alumina to smelted metal). These two processes and their associated power supply represent approximately 90% of our total GHG emissions.

ENERGY

MATERIAL ASPECT

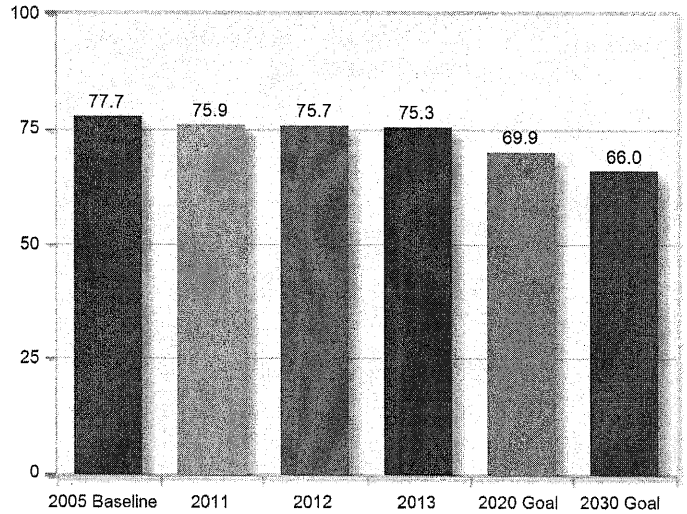
We are committed to reducing the energy requirements for all of our operations and have set the following long-term strategic targets:

- From a 2005 baseline, a 10% reduction in the energy intensity of Global Primary Products (GPP) by 2020; 15% by 2030; and
- A 20% reduction in the energy intensity of all other businesses—Global Rolled Products (GRP) and Engineered Products and Solutions (EPS)—by 2020 from their baselines of 2005 and 2010, respectively; 30% by 2030.

In 2013, GPP reduced its energy intensity by 0.6% compared to 2012 and 3.1% compared to the 2005 baseline. GRP had a 0.6% reduction compared to 2012 and 15% decrease compared to the 2005 baseline. EPS reduced its energy intensity by 2.4% compared to 2012 and 10.3% compared to the 2010 baseline.

Energy Intensity—Global Primary Products

Gigajoules per metric ton of aluminum produced



Goal: 10% Progress: As of Dec. 2013 3.1%

EMISSIONS & WASTE

MATERIAL ASPECT

Bauxite residue and landfilled waste are two of our key strategic sustainability targets.

Bauxite Residue

A byproduct of the alumina refining industry, bauxite residue is stored in impoundments that are capped and re-vegetated when full. Our long-term strategic targets for the material, and our progress against them through 2013, are:

- From a 2005 baseline, 15% reduction in bauxite residue land requirements per unit of alumina produced by 2020; 30% by 2030. Achieved 15%.
- Rehabilitate 30% of total residue storage area by 2020; 40% by 2030. Achieved 15%.
- Recycle or reuse 15% of residue generated by 2020; 30% by 2030. Achieved 0%.

We have a comprehensive and ongoing research program aimed at continually improving residue storage practices to reduce potential

SCAN TO VIEW the Alumina Refining video.

ALCOA

ENERGY

- Our Global Primary Products business group reduced its energy intensity by 3.1% in 2013 compared to the 2005 baseline.
- Compared to their baselines of 2005 and 2010, respectively, our Global Rolled Products business group had a 15.0% reduction and our Engineered Products and Solutions business group achieved a 10.3% decline in energy intensity
- We are a Challenge Partner in the U.S. Department of Energy's Better Buildings Better Plants program.

A Leader in Energy Efficiency

As climate change legislation emerges in regions around the world, Alcoa leads industry efforts to enact policy that promotes market-based incentives to deliver an adequate supply of low to no carbon-emitting energy sources, without unduly burdening industry and affecting global competitiveness. More than 50% of our purchased electricity throughout the company and around two thirds of the electricity used by our smelters globally are generated from renewable sources, including hydro.

We have emphasized energy efficiency since the early days of the company. In 1900, the electrical energy requirements to make a kilogram of aluminum from alumina were more than 55 kilowatt-hours (kWh). By 2000, our electrical energy requirement was reduced to 15 kWh per kilogram. Today, our most efficient smelters can produce primary metal using only 13.1 kWh per kilogram.

We are committed to reducing the energy requirements for all of our operations and have set the following long-term strategic targets:

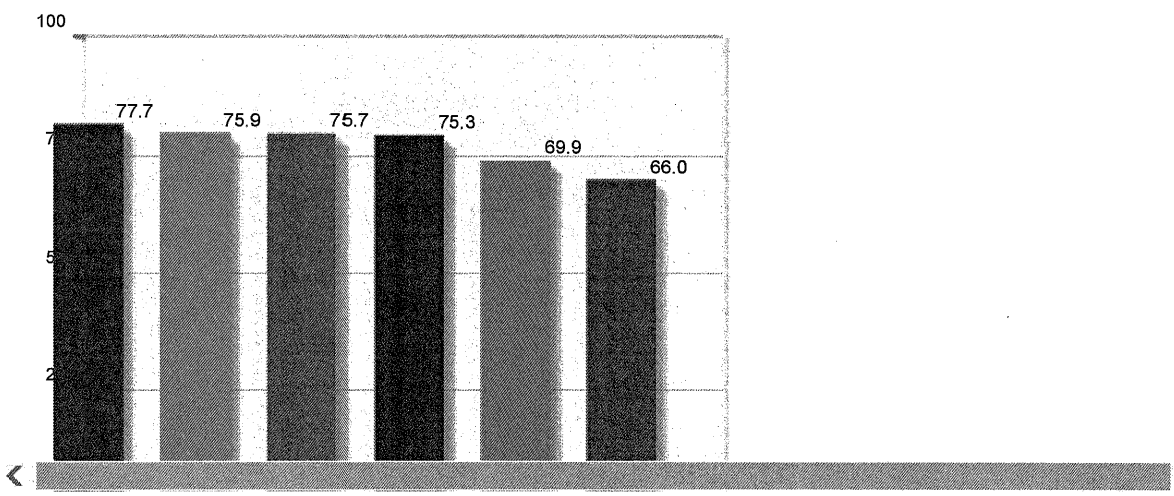
From a 2005 baseline, a 10% reduction in the energy intensity of Global Primary Products (GPP) by 2020; 15% by 2030; and

A 20% reduction in the energy intensity of all other businesses—Global Rolled Products (GRP) and Engineered Products and Solutions (EPS)—by 2020 from their baselines of 2005 and 2010, respectively; 30% by 2030.

All three business groups have made progress toward their long-term energy intensity goals. In 2013, GPP reduced its energy intensity by 0.6% compared to 2012 and 3.1% compared to the 2005 baseline. GRP had a 0.6% reduction compared to 2012 and 15.0% decrease compared to the 2005 baseline. EPS reduced its energy intensity by 2.4 % compared to 2012 and 10.3% compared to the 2010 baseline.

Energy Intensity—Global Primary Products

Gigajoules per metric ton of aluminum produced

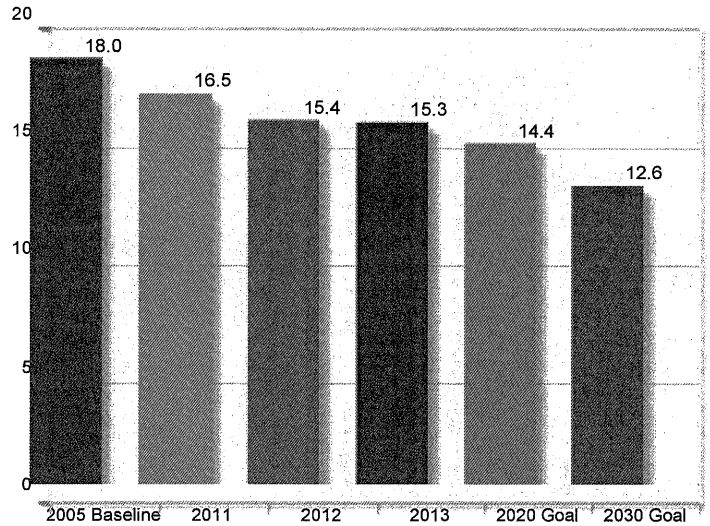


Goal: 10% Progress: As of Dec. 2013 **3.1%**

The energy intensity values have been adjusted to reflect the net energy value after energy sold to the grid, which is a change in the energy intensity calculation methodology used in the past. This impacted the 2005 baseline and years forward.

Energy Intensity—Global Rolled Products

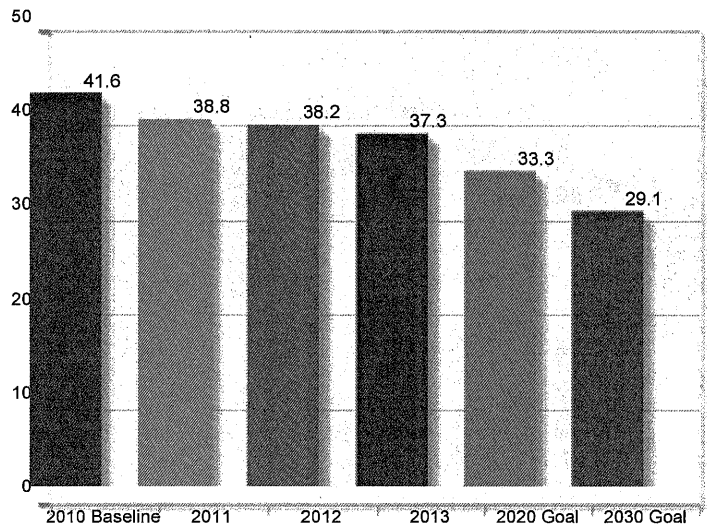
Gigajoules per metric ton of production



Goal: 20% Progress: As of Dec. 2013 **15%**

Energy Intensity— Engineered Products and Solutions

Gigajoules per metric ton of production



Goal: 20% Progress: As of Dec. 2013 **10.3%**

2013 Direct Energy Consumption by Source—All Business Groups

Source	Gigajoules	Percent
Natural Gas	142,032,001	51%
Coal	84,932,647	31%
Oil	43,932,707	16%

Steam	1,307,965	< 1%
Propane	672,685	< 1%
Distillates	207,171	< 1%
Total	277,126,329	100%

2013 Purchased Electricity by Source—Global Primary Products

Source	Megawatt Hours	Percent
Hydro	39,961,491	68%
Coal	10,713,554	18%
Natural Gas	3,818,959	7%
Nuclear	2,046,498	3%
Other Renewables	1,699,430	3%
Local Grid	257,773	< 1%
Oil	39,410	< 1%
Total	58,537,115	100%

Other renewables include geothermal, biomass, solar, and wind energy. Total net gigajoules (GJ) of energy consumed by Alcoa is 500,810,903 GJ [277,126,330 GJ + (58,537,115 MWH + 3,597,489 MWH)*3.6 GJ/MWH]. This calculation includes the direct energy consumption in GJ by all business groups, the electricity purchased in MWH by Global Primary Products, and the electricity purchased in MWH from our EPS and GRP businesses and corporate resource units. For the purposes of total corporate energy accounting, 5,810,272 MWH (20,916,979 GJ) of coal power (self-generated electricity), which is not included in the Purchased Electricity table above, is transferred from Alcoa self-generated assets to manufacturing operations. Total gross GJ of energy consumed by Alcoa is 521,727,882 GJ [500,810,903 GJ + 20,916,979 GJ].

Our GRP and EPS business groups and corporate resource units purchased a combined 3,597,489 megawatt hours of electricity from the local grid.

We report our direct energy consumption and purchased electricity consumption by fuel source. Our energy consumption for heating and cooling is included in our direct energy and purchased electricity consumption numbers and is not directly purchased from outside entities. We also do not sell energy for these purposes.

For energy consumption, as well as greenhouse gas emissions, we use the World Resources Institute (WRI) and World Business Council on Sustainable Development (WBCSD) GHG Protocol to establish boundaries and account for mergers, acquisitions, divestitures, startups, and shutdowns of operating facilities. We report energy consumption based on "management control" as defined in the WRI GHG Protocol. The Intergovernmental Panel on Climate Change Guidelines and the U.S. Environmental Protection Agency databases (such as the Emissions & Generation Resource Integrated Database for the source of data on the characteristics of electric power generation) are used as the source of heat content values for fuel sources.

Energy Developments

We are a global producer of energy, controlling nearly 1.7 gigawatts of generating capacity to provide for the energy needs of our smelting and refining systems.

We operate energy-producing assets in North America and Suriname, and we have partnership positions in Australia, Brazil, Canada, and Jamaica. We are actively developing new energy strategies to mitigate our energy risk and improve our energy portfolio.

In Western Australia, for example, our three alumina refineries— Kwinana, Pinjarra, and Wagerup—are powered on gas sourced primarily from the North West Shelf and have two gas-fired cogeneration units.

Cogeneration is around 75% energy efficient compared to 30% to 50% for other power plants operating in Western Australia. A year's electricity from each of Pinjarra Refinery's cogeneration units saves approximately 450,000 metric tons of greenhouse gas emissions compared to a similar-sized coal-fired plant. That's roughly equivalent to preventing the annual emissions from around 112,000 average cars.

In addition, the cogeneration plants reduce our refinery emissions by 270,000 metric tons per year through more efficient steam generation.

In Brazil, our challenge is to secure sources of energy while simultaneously reducing our impacts on the environment and society. For example, we primarily consume hydroelectric power, which is a clean and renewable energy source. While hydroelectric power does not have the potential effects on global climate change like fossil fuels do, it does impact the environment and community in other ways.

We are a partner in the Estreito Hydroelectric Power Plant in Brazil, which became fully operational in the first quarter of 2013. We have established a social agreement with stakeholders and government authorities at three levels to promote the sustainable development of the 12 municipalities located near the facility. Along with our partners and Brazil's National Bank for Economic and Social Development, we have developed a fund to invest in social projects for these municipalities. Through the end of 2013, approximately US$30 million was invested in 112 social projects in five major areas: social development, education, health, sanitation, and economic development.

We are also a partner in three other operating hydroelectric power plants in Brazil—Barra Grande HPP, Machadinho HPP, and Serra do Facão. The Pai Querê Hydroelectric Power Plant, in which we are also a partner, is in the licensing stage. Another plant that was in the licensing stage—Santa Isabel—was returned to the government in 2013.

In 2012, an external firm audited Barra Grande's sustainability system for compliance with all requirements of the Sustainability Assessment Protocol from the International Hydropower Association. All sustainability areas received a score of 4 or 5 (maximum), establishing a benchmark for hydropower plants in Brazil.

Our Canadian smelters in Deschambault, Baie-Comeau, and Bécancour are supplied almost entirely (approximately 97%) with hydroelectricity. These smelters are "Elite" members of Hydro-Québec's Ecolectrique Club, which is the highest recognition in energy efficiency in the province of Québec.

To further reduce our costs and environmental footprint, we are converting the burners at our alumina refinery in San Ciprián, Spain, from fuel oil to liquefied natural gas (LNG). In July 2011, we replaced 8% of the refinery's annual fuel oil consumption with LNG. In early 2013, Gas Natural, the largest integrated gas and electricity company in Spain, received approval for a natural gas pipeline to the San Ciprián region. Once completed in 2015, the pipeline will enable our refinery to further shift its energy mix and reduce its CO_2 emissions by up to 250,000 metric tons per year, or 25%, while running at full capacity.

Energy Efficiency Initiatives

We voluntarily committed to reducing the energy intensity of our midstream (GRP) and downstream (EPS) manufacturing operations in the United States as a Challenge Partner in the U.S. Department of Energy's Better Buildings Better Plants program.

This program is a national initiative aimed to reduce industrial energy intensity by providing U.S. companies with access to technical support and expertise to help them take steps toward becoming more energy efficient.

Our showcase project for the program was expanding our Barberton, Ohio, wheels production plant to include a 4,645-square-meter (50,000-square-foot) recycling facility that uses a novel technology to reduce energy use by more than 30% relative to comparable existing plants. In addition to the process improvements, co-location of the recycling plant with an existing production facility dramatically reduces trucking needs, leading to a cut in transportation-related energy use of about 90%.

We have placed all of our other GRP and EPS U.S. manufacturing locations in the program and pledged to reduce energy intensity by a combined 25% by 2020 from a 2005 baseline. These locations produce a variety of products, such as turbine fan blades for jet engines, aluminum sheet used to make food and beverage cans, and Reynobond®, an aluminum composite used on the exteriors of commercial buildings. At the end of 2013, we had a combined 14.4% reduction in energy intensity at these locations.

Renewable Energy Initiatives

In China, we are collaborating with the China Power Investment Corporation to develop clean-energy projects, such as wind and solar and state-of-the-art aluminum smelting operations.

We also have taken action to support the development and operation of wind power by providing developers with land and access to local grids through our large grid connections at operating plants and by modulating our electric load. For example, our Portland Aluminium Smelter in Australia gave Pacific Hydro access to land on which to construct wind turbines and the substation for its Portland Wind Energy Project (PWEP). In addition, the smelter facilitated the grid connection of the PWEP via its switchyard infrastructure. The wind turbines have been supplying power to Australia's National Electricity Market since February 2008.

We continue to enhance the efficiency of existing hydroelectric resources and develop new facilities where possible. We believe that the environmental and social impacts of well-designed hydroelectric systems can be minimal if the projects are properly planned and constructed.

For each hydroelectric project, we work with the government and local stakeholders to ensure that proper environmental and social impact studies are conducted and we understand and respond to any local and regional issues of concern. (See the Stakeholder Engagement section for further discussion of our stakeholder processes.)

The hydroelectric systems are designed to minimize the impacts on the local habitat, aquatic life, landowners near the reservoirs, and downstream users of the water resources.

We also use biodiesel fuel to power mobile equipment, and our Brazilian facilities are using various grades of biodiesel in baking furnaces and to power industrial vehicles. These fuels are sourced from social fuel seal holders—companies recognized by the government as producing fuels using sustainable practices.

In addition to our own renewable energy initiatives, Alcoa Foundation and the World Resources Institute are collaborating to develop renewable energy pilots that highlight persistent market barriers and seek solutions that enable renewable energy to make a larger contribution to the energy grid.

Demand Response Initiatives

Unlike other energy sources, such as oil or gas, electricity cannot be stored economically or put in inventory. The electricity produced (generation) must be balanced with the electricity consumed (load) on a real-time basis to preserve the stability of the electrical grid and prevent blackouts and other system disruptions. The challenge for utilities is that the normal peaks and valleys of demand vary throughout each day, by season, and by region.

Demand response is a practice where certain customers, usually larger ones, adjust their electrical load in response to a signal from a utility or the electric grid. This adjustment by the customer helps the utility manage the stability of the electrical system by balancing generation and load. For this service, the customer is compensated.

A number of our smelters in the United States are participants in demand response, providing some or all of the following services:

Capacity: Utilities are required to have more generation capacity than load to compensate for unpredicted spikes in demand. If a utility can consider a portion of a customer's load as system capacity, then the utility may avoid spending money to build additional generation to meet its reserve capacity requirements.

Emergency demand response: A customer will respond within minutes to reduce large blocks of load for short periods of time to balance spikes in demand from other parts of the electric grid. The overall system remains in balance as a result.

Spinning reserves: This service is similar to emergency demand response but on a smaller scale and shorter length of time.

Regulation response: A small percentage of a customer's load is controlled directly by the utility, allowing for real-time adjustments to assist with managing the grid.

In Australia, we have an electricity demand management program for both our smelters and refineries. At these facilities, we reduce our demand for electricity during the hottest days of the year, which generally coincide with the highest demand for electricity. This helps support efficient investment in electricity infrastructure and avoids additional costs of electricity generation to cover events that only occur a few times a year.

Our production facilities in Spain and Norway provide load interruptibility to their respective transmission system operator to help manage the risk of system electrical blackouts. The facilities are remunerated for providing these services.

Case Studies

Aluminum Recycling Facility Cuts Energy Use in Half
Jamaica Bauxite Conveyor Eliminates Emissions, Generates Green Energy

Related Links

Alcoa Energy
Better Buildings Challenge (See Alcoa videos)

TAB 5

GENERAL MOTORS

Connecting YOU to What's Important

2013 SUSTAINABILITY REPORT

MANUFACTURING ENERGY USE & EMISSIONS

ISSUE AT-A-GLANCE

PROGRESS:

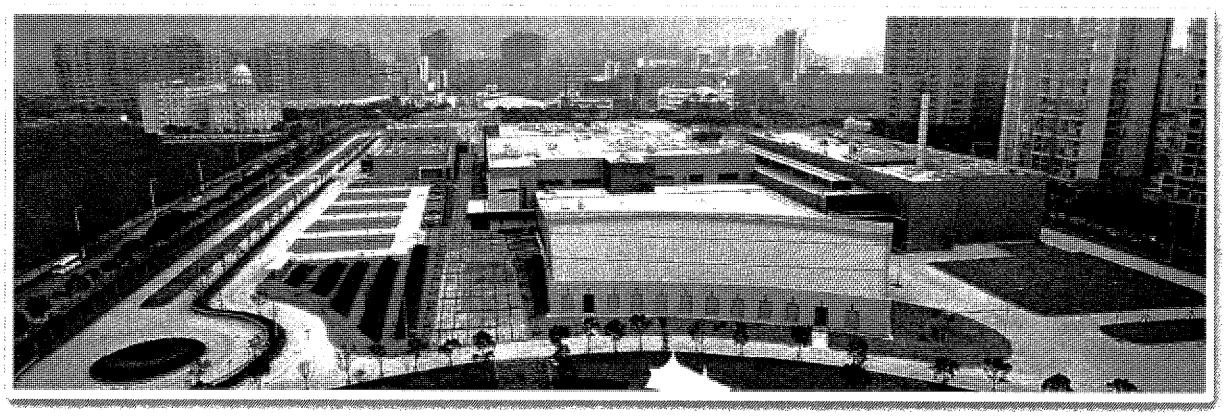
- Reduced energy intensity 3 percent and carbon intensity 2 percent in 2013.
- Expanded linkage of compensation and energy performance further into manufacturing organization.
- Received 2013 ENERGY STAR® Partner of the Year — Sustained Excellence Award.
- Received first ISO 50001 certification in Americas at Rosario, Argentina, plant.
- Announced four new renewable energy projects.

PRIORITIES:

- Expand renewable energy capacity and sources globally.
- Pursue additional energy cost reductions around the world and in the U.S. as part of participation in U.S. Department of Energy Better Buildings, Better Plants program and the U.S. EPA's ENERGY STAR® Challenge for Industry.

CHALLENGES:

- Managing complexity of third-party power purchase agreements for renewable energy.
- Identifying additional energy and emissions-reduction initiatives with low hurdle rates.
- Prioritizing projects with higher capital expenditure requirements against other strategic needs.



Our Advanced Technical Center in Shanghai received Silver Certification by the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) program. The certification recognizes building design and construction that reduces or eliminates environmental impacts and promotes sustainability.

Efforts to address climate change through decreased dependence on petroleum and reduced carbon emissions extend beyond GM vehicles to our global manufacturing footprint. We are an industrial leader in ongoing energy and emissions reductions. Sound energy management policies help define manufacturing excellence and represent significant cost savings — savings that ultimately help us offer customers more affordable vehicles. From incremental investments in more efficient plants to ambitious installations of solar arrays, GM has compiled an exemplary record on this front.

We also have demonstrated our commitment to plant efficiency by linking the environmental and energy performance of our facilities to the compensation for selected plant-level employees. At the end of 2013, we developed and implemented a plan for strengthening management of environmental performance. Through a Business Plan Deployment process, we linked the compensation of a broader cross-section of our global manufacturing employees to GM's performance to our 2020 manufacturing commitments.

GOALS AND PERFORMANCE

Our facilities are working toward a 20 percent reduction in energy and carbon intensity by 2020 with a baseline of 2010, while more than doubling renewable energy use globally during the same period. We are one of 13 Fortune 100 companies, and the only automaker, to set commitments for both renewable energy and greenhouse gas reduction, according to a report prepared by David Gardiner & Associates with the guidance of WWF, Ceres and Calvert.

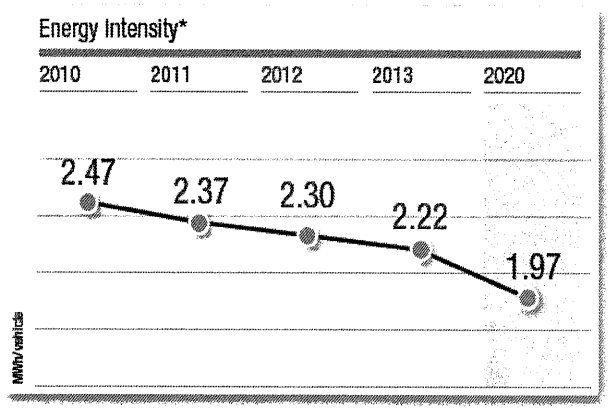
In 2013, the Company realized energy-efficiency improvements of 3 percent from 2012, and carbon emissions intensity decreased 2 percent. Also during the 12-month period, renewable energy use increased from 62.3 megawatts (MW) to 66.2 MW. Our overall energy consumption dropped during this time period, as a result of activities such as paint booth optimization, lighting retrofits, eliminating coal use in Canada, equipment controls, and other conservation and efficiency projects.

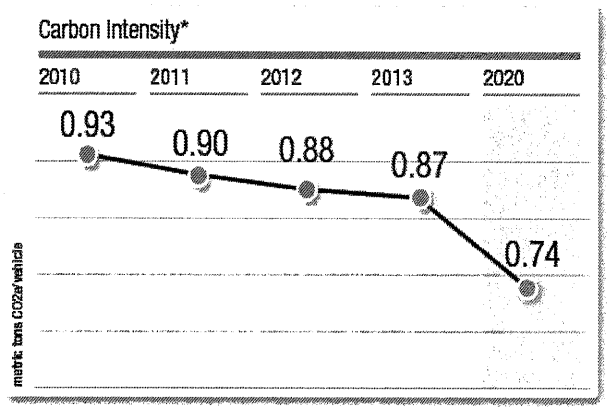
For the most part, progress against these metrics remains consistent with our projected glide path toward reaching our 2020 manufacturing commitments. One of the challenges we face is that our 2020 renewable energy goal was based on doubling solar capacity by 2015. Complexity of solar purchase power agreements and the cost competitiveness of solar energy in various regions of the world are impacting the pace at which we can add solar capacity. As a result, we are evaluating how we can address this potential shortfall.

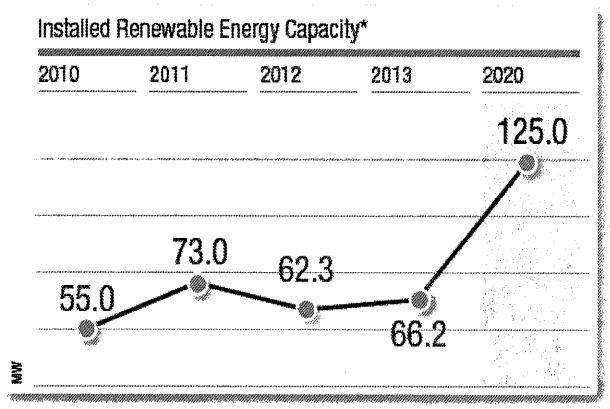
ENERGY EFFICIENCY PROGRAMS

Our record in manufacturing energy and emissions reduction has been underscored by receiving the 2013 ENERGY STAR® Partner of the Year – Sustained Excellence award for energy management by the U.S. Environmental Protection Agency — the highest designation a corporation can receive. We also increased the number of facilities around the world that meet the U.S. EPA's ENERGY STAR® Challenge for Industry from 54 to 63 in 2013. All 63 plants, on average, reduced their energy usage by 25 percent, equivalent to the electricity use of 200,000 homes, and resulting in $162 million in savings.

GM has eight ENERGY STAR®-labeled facilities for superior energy efficiency from the U.S. EPA: two assembly plants, five warehouses and one office building. One of these EPA-certified sites is our Lansing Michigan, Customer Care and Aftersales parts distribution center, which generates 35 percent fewer greenhouse gas emissions and 35 percent less energy than similar buildings in the U.S. We also have five Leadership in Energy and Environmental Design (LEED)-certified buildings around the world. We prioritize energy efficiency and LEED certification in all new construction and upgrading facilities when possible through our internal Green Construction Guidelines.







All manufacturing commitments use 2010 as a baseline and are working toward 2020 goals. Please see page 76 for full footnotes.

During 2013, we continued our participation in the U.S. Department of Energy Better Buildings, Better Plants program. This commitment calls for us to reduce energy costs, per unit of production, at 25 of our U.S. facilities. The result is an anticipated 25 percent or greater combined reduction in energy use at these plants by 2018.

Also in 2013, our plant in Rosario, Argentina, became the first GM plant in the Americas to earn ISO 50001 certification. The certification from the International Organization for Standardization (ISO) acknowledges the best international practices in energy management. GM Argentina met these strict standards by training 70 percent of the complex's employees, including contractors and suppliers who consistently work with the plant, on energy-efficiency awareness.

Currently, the best energy usage among our plants is found within our GM International Operations (GMIO). The latest data show that GMIO's average total energy usage is 1.07 megawatt-hours (MWh) per vehicle, approximately half the industry average of 2.01 MWh per vehicle. GMIO's performance reflects both newer plants, as compared to those in Europe and North America, as well as cultural practices, high productivity and preferences.

Throughout the world, our ability to achieve these savings demonstrates how energy efficiency has become a standard aspect of our manufacturing processes and culture. Investments in equipment upgrades such as lighting, ventilation system controls and automatic shut-offs are made annually, and projects with a hurdle rate of two years or less are implemented based on availability of funds. Since many of our plants have been working to reduce their energy usage for well over a decade, the number of low-hurdle-rate projects is diminishing. A challenge moving forward will be to prioritize funding for energy-saving investments that require higher hurdle rates as compared to other strategic needs in other areas of the business.

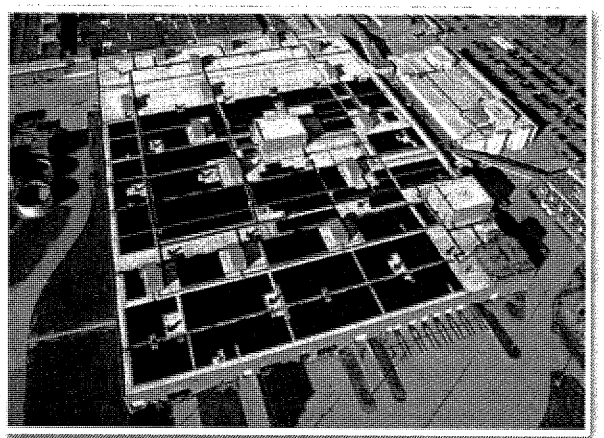
This challenge is one reason we expanded the link between energy performance and compensation from top manufacturing executives to a broader group of salaried employees in our manufacturing area. Our energy-reduction programs continue to encompass plant performance evaluations, which include energy use per production unit for every site. Employees who suggest an improvement to an existing process can receive a portion of the implemented savings up to $20,000.

RENEWABLE ENERGY

Renewable sources comprise a significant part of our manufacturing energy strategy. Today, we are among the top-25 commercial solar leaders in the U.S., as measured by solar capacity. In 2013, the Solar Energy Industries Association also named GM a "Solar Champion" for significantly impacting the establishment of a strong solar industry in America. Overall, we have 40 MW of solar power installed across our global facilities, with two of the largest rooftop solar arrays in the world located at our Opel Rüsselsheim facility in Germany and our Zaragoza plant in Spain.

Solar power enables us to grow our business while decreasing our carbon footprint and minimizing the risks associated with energy-related volatility. Though the business case for solar depends upon a long-term commitment and incentives, our consumption of solar energy is helping to spur growth for a solar industry still in its infancy and will help solar move toward grid parity — the point when the price of an alternative energy source becomes less than or equal to the cost of purchasing power from the grid. During the past year, we became a member of the Solar Energy Industries Association to further demonstrate our support for the U.S. solar industry.

One of our newest U.S. solar installations was expanded to 1.8 MW capacity for the rooftop solar array on our Toledo Transmission facility, which powers 3 percent of the electricity consumption at the facility. We also have completed construction of a solar installation at our Changwon Assembly plant in South Korea, the home of the Chevrolet Spark and Spark EV. The 3 MW installation will cut carbon emissions by 2,400 metric tons annually. In addition, we have announced another solar project at Changwon that will increase capacity to 6.5 MW in 2014.



In South Korea, we use renewable energy generated by the Changwon Assembly plant's 3MW rooftop solar installation.

Solar power is only one of a diverse portfolio of renewable energy sources for GM. In total, we use more than 66 MW of renewable energy across our global facilities. We are one of the largest users of landfill gas in the U.S., where three of our facilities combined generate more than 24 MW of renewable energy from landfill gas. In addition, our GM do Brasil manufacturing facilities in 2013 procured on average 8 MW of small hydro-generated electricity.

In late 2013, we joined with Detroit Renewable Energy to announce a renewable energy project to turn solid municipal waste from the metropolitan Detroit area into process steam that will be used to heat and cool portions of our Detroit-Hamtramck assembly plant, home of the Chevrolet Volt. When the project is operational, 58 percent of the plant's energy needs will come from renewable energy, which today would make Detroit-Hamtramck the top GM facility in the world by percentage of renewable energy used. This agreement also eliminates the use of coal, saves money and reduces GHG emissions by 57,000 metric tons.

Extending Sustainability to Dealerships

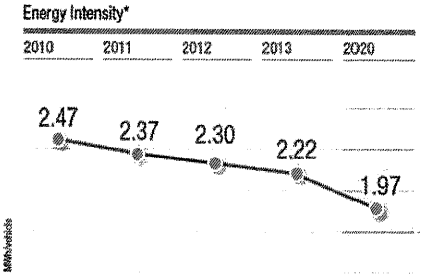
GM Dealerships with LEED Certification	
Taylor & Sons Chevrolet	Ponderay, Idaho
Nunnally Chevrolet	Bentonville, Arkansas
LaFontaine Chevrolet	Dexter, Michigan
LaFontaine Buick GMC Cadillac	Highland, Michigan
Mountain View Chevrolet	Chattanooga, Tennessee
Shelton Buick GMC	Rochester Hills, Michigan
Frank Kent Cadillac	Fort Worth, Texas

GM is developing a Green Dealer Recognition program to celebrate the sustainable efforts of dealers that are driving efficiency and green attributes into their facilities and operations. Gaining inspiration from our global sustainability initiatives, the program will not only recognize current dealer successes, but also enable dealers to share best practices among each other. This exchange will enable more dealers to incorporate environmentally sensitive and financially efficient methods into their existing and newly refurbished facilities.

Today, sustainable practices at GM dealerships include geothermal systems in Augusta, Maine; solar fields in Rome, New York; solar tube skylights in Gardner, Massachusetts; solar EV charging stations in Modesto, California; as well as nationally installed thermal window and waste oil heating systems. In addition, several GM dealerships have achieved LEED certification of their facilities, and more than a dozen are implementing projects that will lead to future certification.

ENVIRONMENTAL

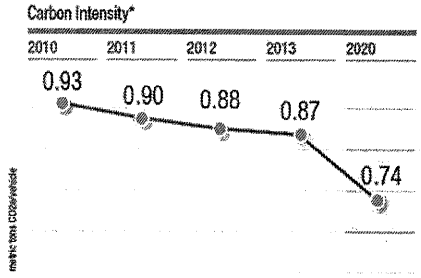
Energy Intensity*



* All manufacturing commitments use 2010 as a baseline and are working toward 2020 goals.

Includes all manufacturing and nonmanufacturing facility energy use, normalized by vehicle production (correlates to the CO2 scopes). These data include data from some GM JVs.

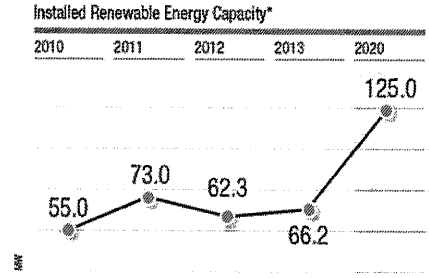
Carbon Intensity*



* All manufacturing commitments use 2010 as a baseline and are working toward 2020 goals.

Includes all manufacturing and nonmanufacturing CO_2e emissions reported in the Carbon Disclosure Project (CDP) Scope 1 & 2 categories, normalized by vehicle production. These data include data from some GM JVs.

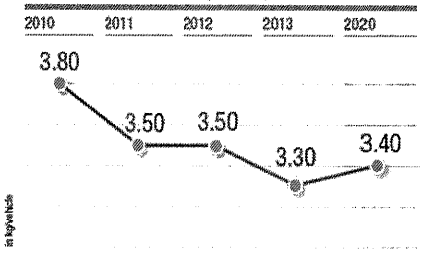
Installed Renewable Energy Capacity*



* All manufacturing commitments use 2010 as a baseline and are working toward 2020 goals.

Renewable energy generation for solar power, landfill gas and hydro-generated electricity may be estimated based on technology capacity factors where actual data is not available. Capacity factors are obtained through the National Energy Laboratory, a division of the U.S. Department of Energy.

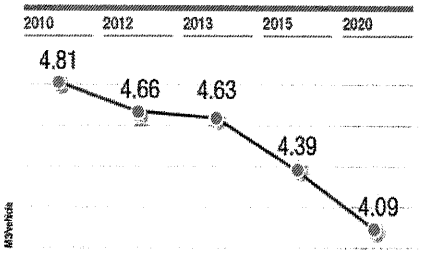
VOC Emissions from Assembly Painting*



* All manufacturing commitments use 2010 as a baseline and are working toward 2020 goals.

The previous 2010 baseline of 3.8 kg VOC/Vehicle has been updated to account for VOC destroyed by abatement, resulting in a decrease of 0.1 kg VOC/Vehicle for a new baseline of 3.7 kg VOC/Vehicle. VOC emissions are composed of the following emission units: ELPO, Primer, Topcoat, Final Repair and Cleaning Solvents, which are considered the major sources of VOC emissions from typical paint shops. Excluded are minor sources of VOC emissions, such as maintenance painting, etc. These data include data from some GM JVs.

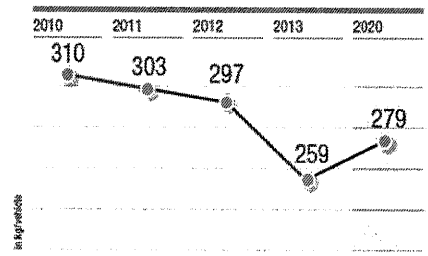
Global Water Intensity*



* All manufacturing commitments use 2010 as a baseline and are working toward 2020 goals.

Includes all manufacturing and nonmanufacturing facility water consumption (municipal, surface, well), normalized by vehicle production. These data include data from some GM JVs.

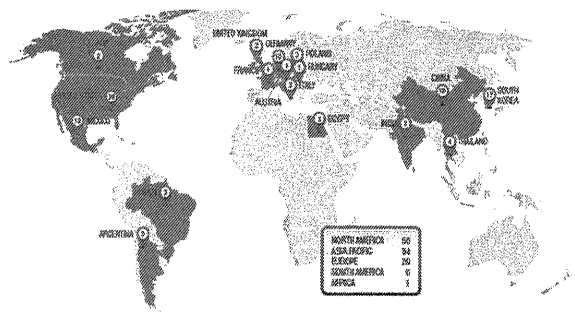
Waste*



* All manufacturing commitments use 2010 as a baseline and are working toward 2020 goals.

Total waste includes all byproducts that are generated as a result of daily manufacturing operations. This definition includes metal scrap and foundry sand, and excludes reused waste, construction, demolition and remediation debris. For 2012, a comprehensive global review of waste management classifications identified some instances where closed-looped recycling and other forms of recycling were misidentified as reuse, resulting in an adjustment of previously reported data.

GM 111 LANDFILL-FREE SITES



The term "landfill-free" means that all by-products (waste) that come from operations are managed by any other method except placement in a landfill. This includes periodic by-products, such as pit cleanouts. By-product material residues that have been sent to an off-site recycling center and subsequently landfilled by the processing and/or recycling center must not exceed one percent, by weight, of the GM facility's annual total waste production volume. The ash generated from GM waste materials at off-site energy recovery facilities is exempt. Individual plants, i.e., assembly, stamping, foundry, engine or transmission plants; parts distribution, proving grounds and technical centers, are treated as "facilities" or "sites." These data include data from some GM JVs.

COMMUNITY:

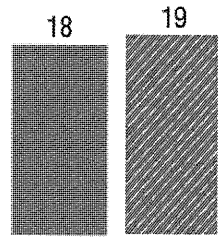
Promote and engage community outreach on environmental and energy issues by completing one outreach activity per plant on an annual basis.

97%

Participation in 2013

WILDLIFE HABITATS:

Improve wildlife habitats by having a Wildlife Habitat Certification (or equivalent) at each GM manufacturing site where feasible by 2020.



Co-located sites, such as an assembly plant, stamping plant and engine plant all located at the same complex, are treated as a single site.

PRODUCT COMMITMENTS

U.S. ELECTRIFICATION

500,000

vehicles on the road in the U.S. with some form of electrification by 2017.

153,034 vehicles as of 2013

MOBILE EMISSIONS

CO2

Reduce the average carbon emissions of U.S. fleet by 15 percent by 2016; Opel/Vauxhall fleet in Europe by 27 percent by 2021; and China fleet 28 percent by 2020.

- **U.S. down 2.3% from 2012 to 2013**
- **Europe down 2.3% from 2012 to 2013**
- **China baseline year is 2013**

U.S. FUEL ECONOMY

40 mpg

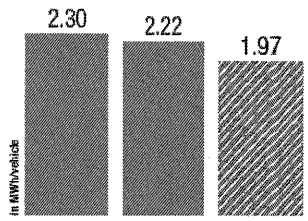
GM will double the number of U.S. models that can achieve an EPA-estimated 40 mpg highway or better by 2017.

Five models as of 2013

2020 MANUFACTURING COMMITMENTS

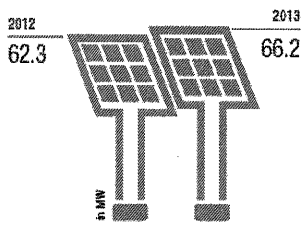
COMMITMENT 1:

Reduce energy intensity from facilities by 20 percent.



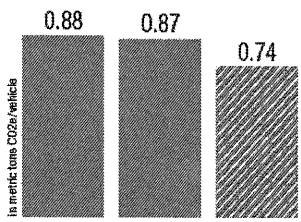
COMMITMENT 2:

Promote global renewable energy use to utilize 125 MW of renewable energy by 2020.



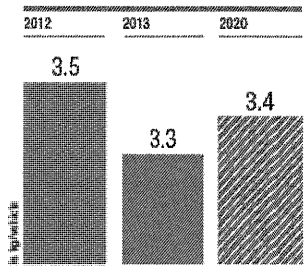
COMMITMENT 3:

Reduce carbon intensity from facilities by 20 percent.



COMMITMENT 4:

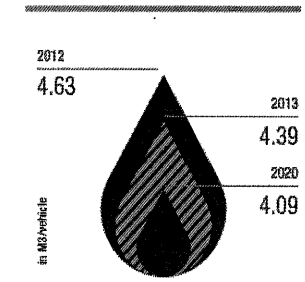
Reduce VOC emissions from assembly painting operations by 10 percent.



Commitment achieved in 2013.

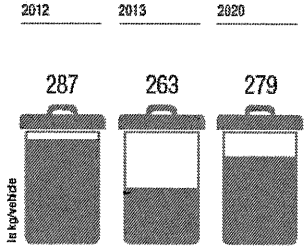
COMMITMENT 5:

Protect water quality and reduce water intensity by 15 percent.



COMMITMENT 6:

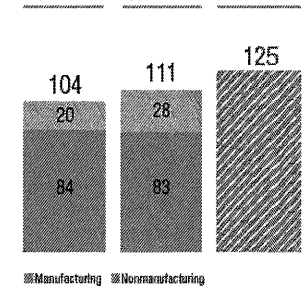
Reduce total waste from facilities by 10 percent.



Commitment achieved in 2013.

COMMITMENT 7:

Promote landfill-free sites to achieve 100 landfill-free manufacturing sites and 25 nonmanufacturing sites.



COMMITMENT 8:

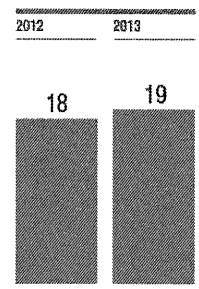
Promote and engage community outreach on environmental and energy issues by completing one outreach activity at all plants on an annual basis.

97%

Participation in 2013

COMMITMENT 9:

Improve wildlife habitats by having a Wildlife Habitat Certification (or equivalent) at each GM manufacturing site where feasible by 2020.



TAB 6

ELI LILLY AND COMPANY

Lilly 2012-13 CORPORATE RESPONSIBILITY REPORT

Our greatest contribution to society is making medicines that help people live longer, healthier, more active lives. But our company vision—to improve global health in the 21st century—demands that we do even more.

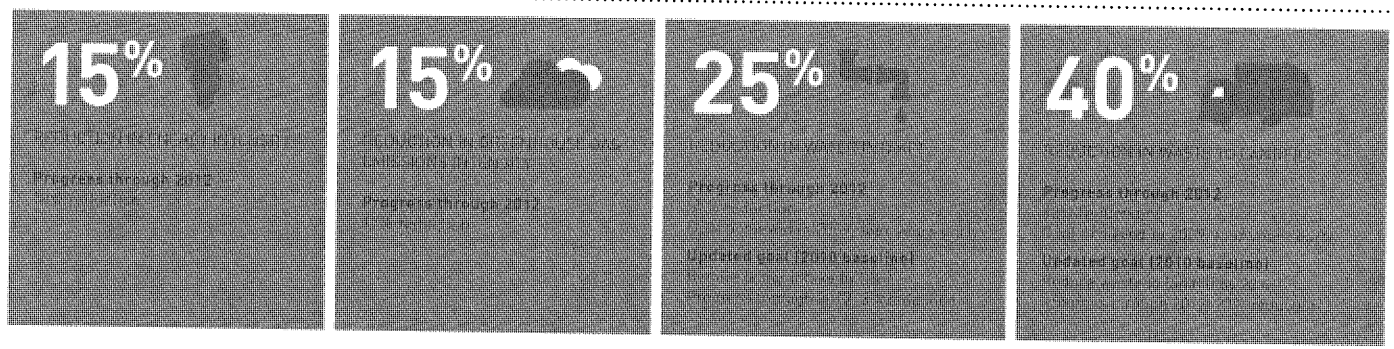
CONTENTS

Lilly's Environmental Goals

Setting, driving toward, and communicating our progress to achieve HSE performance goals are central to our HSE management approach.

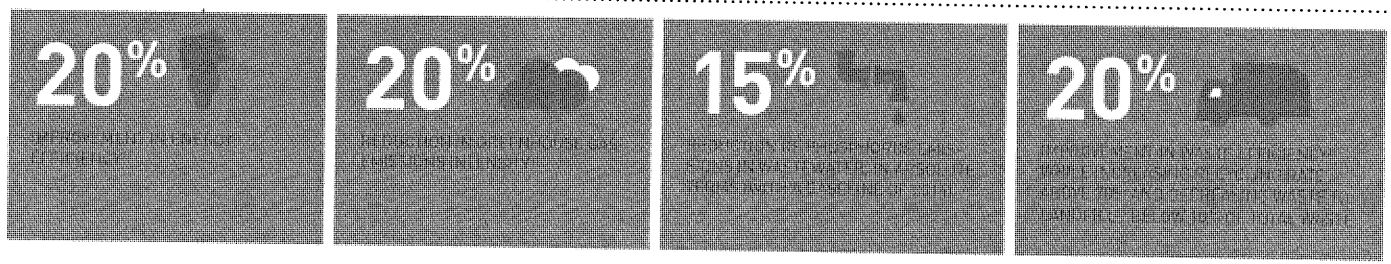
In 2008, Lilly established several HSE performance goals to minimize our impact on the environment and to reduce employee and contractor injuries. We achieved our water intake and waste-to-landfill reduction goals significantly ahead of the target date and reset our goals for these measures, demonstrating our drive for continuous improvement. For information about progress toward our health and safety goals, see **page 59**.

2013 GOALS (BASELINE OF 2007 UNLESS OTHERWISE NOTED)[30]



As described above, we've made significant progress against our 2013 environmental goals. To motivate Lilly to continually decrease our environmental impacts, we've launched a new set of goals for 2020. As in the past, we'll continue to report our progress transparently.

2020 GOALS (BASELINE OF 2012 UNLESS OTHERWISE NOTED)[30]



[30] Following World Resources Institute guidance, progress toward environmental goals is reported on an adjusted basis accounting for mergers, acquisitions, and divestitures, as appropriate, to ensure comparability, unless stated otherwise.

[31] Per square foot of facility space.

[32] This goal covers Lilly's Scope 1 and Scope 2 emissions.

[33] In absolute terms.

[34] Lilly's former and current waste-to-landfill goals do not include construction and demolition debris, biosolids from wastewater treatment plants, incinerator ash, coal ash if reused for mine reclamation or road base, and mycelia and urea reused for fertilizer.

[35] Per unit of production or relevant index.

PERFORMANCE IN OPERATIONS

We are committed to continually improving environmental performance across Lilly's operations. This includes our most significant areas of environmental impact—energy use, greenhouse gas (GHG) emissions, water use, and waste. We are also dedicated to maintaining compliance with applicable legal standards, advancing our green procurement, reducing non-GHG air emissions, and supporting biodiversity efforts in communities where we operate. As a fundamental part of our approach, we establish, work toward, and share progress against HSE performance goals (see page 75).

Energy Use and Greenhouse Gas Emissions

The topic of climate change is compelling governments, companies, and citizens worldwide to act. We've responded to climate change by setting and making progress toward aggressive targets for improved energy efficiency and reduced GHG emissions. These efforts improve our environmental performance and decrease energy use, which represents one of the most substantial operational costs for our research, manufacturing, and distribution activities. Recognizing the connection between GHG emissions and water use, we have also conducted evaluations of water-stressed areas where we operate (see page 85).

Energy assessments are central to our approach. Since 2006, we have conducted 30 energy assessments at our most energy-intensive sites. These findings have contributed to approximately $137 million in cumulative cost avoidance[36] from 2007 to 2012, while helping us to avoid more than 800,000 metric tonnes CO_2e of GHG emissions during that same time period.

Additionally, Lilly has implemented several global strategic initiatives to support these efforts, such as energy submetering to enable monitoring and benchmarking of facilities and utility equipment, use of the Laboratory Energy Efficiency Profiler assessment tool, and retrocommisioning[37] of laboratory and administrative facilities.

At three facilities, we generate electric power using photovoltaic arrays. At a fourth Lilly site, we have entered into an agreement to purchase solar power from a third-party provider that is constructing a nearly 10-MW array adjacent to our facility. We continue to use renewable energy to diversify our energy sources and decrease GHG emissions globally, using direct generation as well as direct and indirect purchases of renewable energy from local utilities. Cogeneration, which involves using an on-site engine to generate electricity while also recovering usable heat from the process to improve overall energy efficiency, is another important part of our approach. We currently feature three sites with 10-MW, 4.3-MW, and 2.4-MW cogeneration units in operation.

ENERGY PROGRAM

We are committed to using energy in the most efficient, cost-effective, and environmentally responsible manner. To do so, we establish energy-efficiency goals and implement energy management practices globally. Our approach includes the following elements:

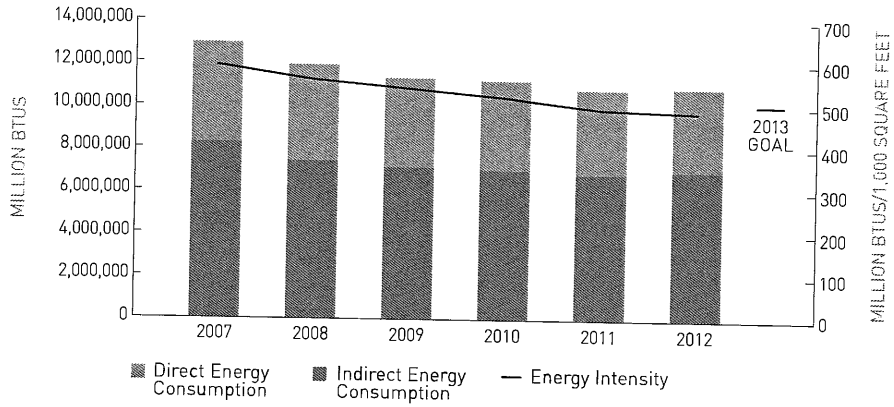
- Design for energy efficiency in new or updated processes and facilities;
- Operate our facilities and equipment efficiently;
- Monitor and report energy consumption and resulting GHG emissions;
- Conduct energy assessments and implement initiatives to enhance energy efficiency;
- Utilize alternative energy sources, new technologies, and best practices; and
- Participate in local, regional, and/or national forums to influence responsible and cost-effective decision-making and policy development relative to energy.

To expand benefits companywide, Lilly employees share best practices in energy efficiency through several channels, such as our global health, safety, and environment workshop, regional networks, and Engineering Technical Center. The latter is a group of experienced engineers who provide consultation on operational issues, including energy forecasting and efficiency initiatives to manage projected demand. We also conduct a yearly internal awards presentation for HSE performance (which, similar to the initiatives described earlier in this paragraph, also addresses water savings and waste reduction).

[36] Lilly has calculated estimated cost avoidance due to energy efficiency improvements based on financial models, energy rates, and other factors.

[37] "Retrocommissioning" refers to a structured process for identifying suboptimal performance in an organization's lighting, heating, cooling, and other systems, and making adjustments as needed.

PROGRESS TOWARD GOAL—ENERGY USE



Other educational opportunities include the following:

- Energy-focused webinars and collaboration sites on the Lilly intranet,
- Use of our internal social networking site to share best practices and make suggestions,
- Global Energy Day, a widely attended annual employee event that includes poster presentations, videos, contests, guest speakers, and energy-focused informational booths to promote awareness of and progress toward Lilly's companywide energy goal.

In 2012, Lilly's energy use totaled 10,900,000 million BTUs, almost 1 percent more than 2011 (see graph). Since 2007, our energy intensity per square foot of facility space has improved by nearly 18 percent, exceeding the company's goal of a 15 percent reduction by 2013.[38]

During 2012, the company's Scope 1 and Scope 2 GHG emissions equaled 1,580,000 metric tonnes CO_2e, less than 1 percent greater than in 2011 (see graph on **page 84**). Lilly's GHG emissions intensity improved by almost 17 percent compared with 2007, surpassing the company's goal of a 15 percent improvement by 2013.[39] The decrease in Scope 1 and Scope 2 GHG emissions between 2007 and 2012 is equivalent to the annual emissions of about 54,000 passenger vehicles.[40]

This year, we again reported several categories of Scope 3 GHG emissions, as included in the Summary Data Table on **page 90** (and not included in the graph on **page 84**). We are committed to continually expanding the scope and quality of our disclosure in this area. To support these efforts, we have initiated a project to gather energy and GHG data from our key suppliers to more effectively assess our Scope 3 emissions and overall carbon footprint.

[38] Following World Resources Institute guidance, progress toward environmental goals is reported on an adjusted basis accounting for mergers, acquisitions, and divestitures, as appropriate, to ensure comparability, unless stated otherwise.

[39] This goal covers Lilly's Scope 1 and Scope 2 emissions per square foot of facility space.

[40] According to **www.epa.gov/cleanenergy/energy-resources/refs.html**.

[41] Capper, J. July 2010. "Comparing the Environmental Impact of the U.S. Beef Industry in 1977 to 2007." Abstract presentation at the American Society of Animal Science meetings.

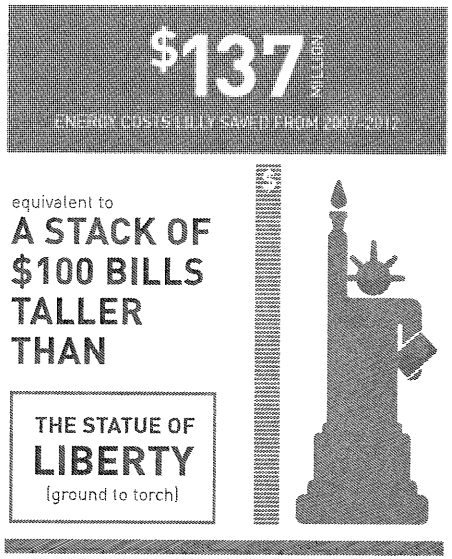
CLIMATE CHANGE-RELATED RISKS AND OPPORTUNITIES

Lilly faces various climate change-related issues, risks, opportunities, and impacts in its global operations, which we integrate into the framework of our Corporate Responsibility and Enterprise Risk Management (ERM) strategies.

We regularly assess climate change-related regulatory risks and opportunities through our environmental regulatory technical committee (ERTC), and physical and other climate change-related risks through our ERM process. Information from these assessments informs our business strategies across multiple components within the business.

One set of risks and opportunities that Lilly focuses on relates to food animal production (the production of animals used for human food consumption) due to our Elanco animal health product portfolio. Food animal production has a sizable impact on global GHG emissions, and our products and services help producers sustainably deliver more food and address hunger globally while using fewer resources. This decreases climatic and other environmental impacts while making food safer, more affordable, and more abundant. For example, between 1977 and 2007, efficiency-enhancing technologies reduced the carbon footprint per kilogram of beef produced by 18 percent, while also decreasing related water usage by 14 percent and associated land usage by 34 percent.[41]

To increase awareness about these benefits, we analyze and communicate improved animal productivity and health as a means to reduce GHG emissions as well as impacts on natural resource use (such as land, water, and fossil fuels). We share this information with food animal industry organizations; various non-governmental organizations; multistakeholder groups, such as Global Roundtable for Sustainable Beef, U.S. Dairy Innovation Center, and National Pork Board; as well as companies operating within the sector's retail supply chain.



Lilly's 2013 CDP climate change disclosure score increased to 86, compared to the average score of 82 in the healthcare sector and our company's score of 65 in 2012. Our performance band also improved, from C to B. See Lilly's recent **CDP climate change submission** for additional detail about the company's approach and performance in this area.

➡ Reducing Energy Use in Augusta, Georgia

Lilly continually looks for opportunities, both large and small, at all of our facilities to reduce energy use. For example, Lilly's manufacturing site in Augusta, Georgia, optimized the operation of its air compressors to virtually eliminate unneeded use during the facility's fermentation cycles. These improvements have reduced energy use related to compressed air by 43 percent. Based on 2012 production volumes, the project decreased energy use by 4.5 million kWh, while saving $290,000 during the year. Production needs are projected to increase significantly over the next five years, which will result in even greater savings.

➡ Designing Green Buildings in Kinsale, Ireland

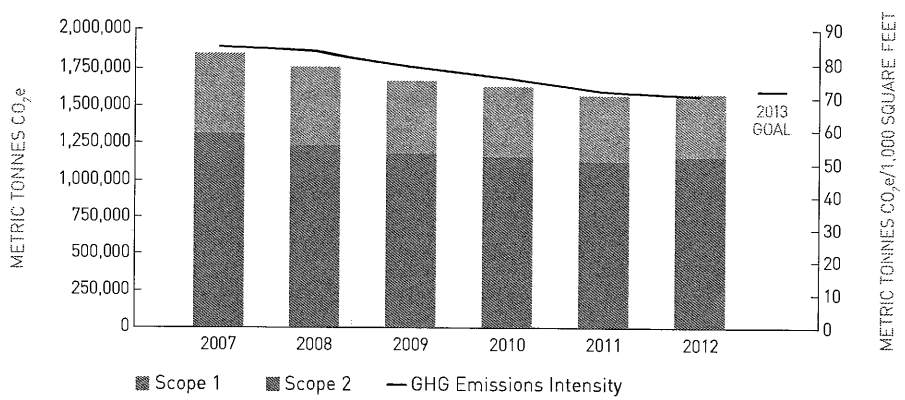
In Kinsale, Ireland, Lilly's new biotech facility, currently under construction, is designed for the manufacture of future biomedicines. The structure will have about 47 percent more floor space than the current largest biotech building at the site, and originally had been projected to increase the site's total energy use and costs by as much as 70 percent. In the conceptual phase, Lilly global facilities delivery group, the project's architecture and engineering firms, and Kinsale site engineers partnered to integrate energy efficient design considerations throughout the project. As part of this process, the extended team identified and documented 135 energy conservation measures, of which nearly 50 were ultimately approved. These collectively have the potential to reduce annual GHG emissions by more than 9,300 metric tonnes CO_2e and decrease water use by nearly 30 million liters yearly, compared to original projections, while saving an estimated $1.7 million in energy costs annually.

➡ Decreasing Environmental Impacts in Sales and Marketing

We use a scorecard at our sales and marketing affiliates in the Americas, Canada, and Europe to identify and assess progress toward reducing energy use, water consumption, waste, and transportation. Each year, these affiliates look for opportunities to enhance their environmental performance by identifying and planning new projects and setting targets across more than 40 dimensions. Between 2012 and 2013, 10 of 25 affiliates moved up a performance level (the levels include Beginner, Follower, Good Citizen, Leader, and Best in Class). Eighty percent of affiliates have returned a scorecard showing improved performance through new green initiatives.

Across our sales and marketing organization, we are converting part of our fleet to TDI (Turbocharged Direct Injection) clean diesel models to leverage our purchasing power and decrease our GHG emissions. At the same time, we are saving money and still providing high-quality fleet options with outstanding safety ratings for our representatives. Compared with a similar-sized gasoline engine, these diesel engines deliver about 30 percent better fuel economy and reduce CO_2e emissions by a corresponding amount.

PROGRESS TOWARD GOAL—GHG EMISSIONS



TAB 7
LINDE GROUP

Energy

Innovative technologies and the efficient use of energy are key to conserving resources, reducing greenhouse gases and remaining commercially successful. We offer our customers solutions for the many facets of sustainable electricity and fuel production – from solar energy and biological fuels up to environmentally friendly hydrogen as a method to store energy.

Energy efficiency measures

Energy efficiency is a key competitive factor for Linde. The production of industrial gases is an energy-intensive process. One of our biggest challenges is therefore to reduce the consumption of energy – and thus also greenhouse gas emissions. The basis for this is our global energy management.

Linde covers about 80 percent of its energy needs with electricity and natural gas. The majority of this energy is used to produce air gases in air separation units. Accordingly, we focus in particular on this area for improving our energy efficiency and productivity.

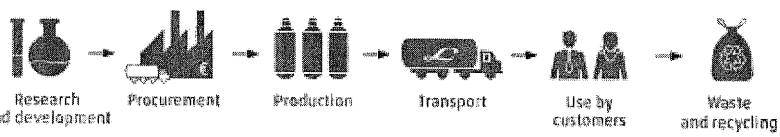
We analyse the energy efficiency of plants and processes through internal audits. Identified savings potential is systematically implemented where technically and economically sensible. For example, all production facilities operated by Linde Gas Germany have been certified in accordance with ISO 50001. This global standard is evidence of a systematic approach to energy management with well-defined responsibilities and goals, coupled with on-going efforts to increase efficiency.

Renewable energy

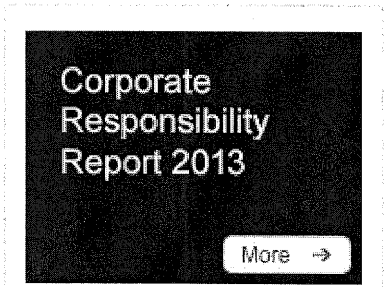
The proportion of renewable energy in our electricity mix largely reflects the national electricity mix offer at our sites. We undertake additional activities aimed at promoting regenerative energies. In Sweden, for instance, the company holds a stake in the wind power company VindIn. The aim of this long-term initiative is to generate 1 million MWh of electricity through infrastructure improvements. Healthcare has been obtaining Renewable Energy Certificate System (RECS) certificates since 2009. RECS certificates confirm that energy has been produced in an environmentally friendly way.

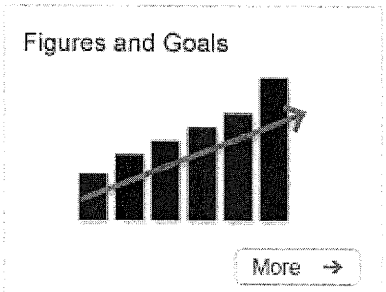
> More on our goals for energy efficiency and climate protection
> Current data and projects on energy efficiency
> More on technologies for renewable energies and energy efficiency

Responsibility along the value chain



Highlighted: Areas of the value chain relating to the issues covered on this page





More information

Risk management
Key topics

Company guidelines

Safety, health, environment (PDF 1798 KB)

THE LINDE GROUP

GOALS

GOAL	TIMELINE	PROGRESS	STATUS
SITE SAFETY			
Standardised risk review for sites and definition of control mechanisms to minimise risks to the greatest possible extent (Major Hazards Review Programme, MHRP)	Long-term goal	76 percent of sites concerned certified in line with MHRP by the end of 2013 > More	
TRANSPORT			
Transport safety initiative Adoption of all local and global minimum operating standards for transport Integration of transport standards in a global database Training on revised standards for employees and transport contractors Audits to ensure compliance with operating standards Global implementation of new behavioural transport safety driver training programme (ActSafe for Drivers)	2012–2015	75 transport safety auditors trained 23 percent of sites with transport activities audited Around 1,500 participants in driver safety training sessions in South-East Asia > More	
50 percent reduction in the frequency rate of serious transport incidents (base year 2012)	2017	Number of serious transport incidents down to 0.062 per million road kilometres > More	
CLIMATE PROTECTION AND ENERGY EFFICIENCY			
3 percent improvement in energy intensity in installed air separation plants (relative to 2008 baseline)	2013	Goal achieved > More	
5 percent improvement in energy intensity in installed air separation plants (relative to 2008 baseline)	2017	Average energy intensity 2013 already improved by 3.8 percent > More	

GOAL	TIMELINE	PROGRESS	STATUS
SITE SAFETY			
2 percent improvement in actual energy efficiency in our installed HyCO plants (relative to 2009 baseline)	2015	New Goal > More	
Evaluation of ways to reduce CO_2 emitted by transport service providers (scope 3 emissions)	Ongoing	Use of larger tanks to reduce transport journeys; transport costs reduced by around EUR 500,000 in Germany in 2013 Driver training targets fuel conservation > More	
WATER			
Development of a strategy for sustainable water use in water-stressed regions	2013	Measures and goals evaluated on various sites in order to optimise the sustainable use of water Pilot study in Great Britain > More	
FURTHER KEY ENVIRONMENTAL AREAS			
Evaluation of additional quantitative environmental protection goals	Long-term goal	Pilot project in South-East Asia on waste-management optimisation completed; findings to serve as a basis for the development of further measures > More on climate protection > More on waste	

Corporate Responsibility

REPORT 2013

SAFETY AND ENVIRONMENTAL PROTECTION

GOALS

+2%
improvement in energy efficiency for installed HyCO plants by 2015

-50%
serious transport incidents by 2017

-5%
energy intensity for installed air separation plants by 2017

PROGRESS

1,500
drivers
in South-East Asia provided with safety training designed to avoid accidents with motorcyclists

-17%
serious transport incidents in 2013 compared to previous year

-1.4
million tonnes of CO_2 emissions
avoided as a result of the improvement in the energy intensity of air separation plants, average energy intensity improved by 3.8%

35
million EUR cost savings
with energy efficiency projects in 2013

60%
recycling rate
in UK as a result of a pilot project for waste management

OUTLOOK

Improving environmental management:
findings from waste management pilot projects in South-East Asia and in the UK to be extended to other countries; plans to obtain ISO 14001 certification for more engineering sites

Raising safety awareness:
global initiative planned which will cover the most important safety issues

Product responsibility:
investment of EUR 3 million planned to improve product safety data sheets and to refine the labelling of products for transportation purposes

ENERGY

Strategy

We rely on our global energy management to use resources as efficiently as possible. The basis for this is a global audit of the energy efficiency of our plants and processes. The production of air gases in air separation plants accounts for the greatest share of the Group's electricity consumption (over 85 percent). This is why we particularly focus on improving energy efficiency and productivity and have set ourselves a global target in this area.

Energy consumption (in million MWh)[1]

	2013	2012	2011	2010
Electricity consumption✓	23.4	23.5	20.3	19.0
of which by air separation plants✓	20.7	20.8	17.9	16.8
Natural gas consumption✓	36.4	35.9	25.4	25.2
of which by HyCO plants✓	23.0	22.8	21.7	21.2
Consumptions of other energy sources[1]	✓14.8	✓13.4	✓11.7	6.4

✓ Assured by KPMG

1 Other energy sources include for example thermal energy, heating oil, biofuel energy, propane, butane, and since 2013 diesel fuel. The increased consumption of other energies in 2011 resulted from the inclusion of additional other energy sources (e.g. naphtha and methanol) into the indicator scope.

1 As a result of the first-time application of the revised accounting standards, the sites in the scope of our reporting changed in the 2013 financial year. Accordingly, the key financial, environmental and employee KPIs for 2012 were adjusted retrospectively. In addition, the KPIs for employees, occupational health and safety and environmental protection for the year 2012 were retrospectively adjusted to account for the effects of the acquisition of the US homecare company Lincare. To ensure that the figures for 2012 and 2013 can be compared, we reported the full year 2012 for Lincare.

Energy consumption and energy efficiency

Compared to 2012, Linde's overall energy consumption increased slightly. As a result of changes in accounting standards, joint ventures that had not been included in the key performance indicators in previous years were recognised in 2013. To maintain comparability, the figures for 2012 were adjusted retrospectively. Some of the newly included sites are highly energy-intensive and contributed to an increase in the overall energy needs of the Linde Group in comparison to the years prior to 2012.

227,000 tonnes
of CO_2 saved through energy efficiency projects

In 2013, we identified around 300 projects that help us reduce the Group's energy consumption. By implementing these projects, we achieved cost savings of more than EUR 35 million and saved 227,000 tonnes of CO_2. In California, for example, we have been working with energy companies on 16 projects since 2009 to optimise energy use at Linde sites. As a result, we have reduced energy costs at these sites by USD 1.75 million per year.

The production plants operated by Linde Gas Germany have been certified to ISO 50001 since 2012. This global standard is evidence of a systematic approach to energy management with clear assignments of responsibilities, well-defined goals and on-going identification of scope for efficiency gains.

Renewable energy

As an energy-intensive company, Linde depends on access to a reliable and competitively priced energy supply. We are exploring the use of renewable energies, the level of which currently largely reflects the energy mix applicable in different locations across the world. In the UK, we have obtained 100 percent of the electricity we use at all office sites from renewable energy sources since the end of 2013. In Sweden, Linde owns a share of around 9 percent in the wind energy company Vindln. The long-term goal of the initiative is to provide 1 million MWh of electricity. Some 190.000 MWh of electricity were already

generated as part of this project in 2013. Linde Healthcare has been obtaining Renewable Energy Certificate System (RECS) certificates since 2009. RECS is an initiative that promotes regenerative energy sources across Europe. In the period under review, 40,000 MWh of the energy we consumed was RECS certified.

MORE ON

- Our global energy efficiency and climate protection goals
- Regulatory risks in our annual report

TAB 8

CHRYSLER LLC

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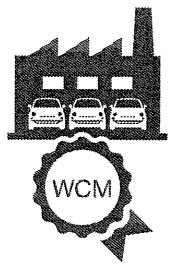
CHRYSLER

2014 SUSTAINABILITY

Sustainable manufacturing

As a result of our continued focus on environmental performance, 99% of Group plants are already certified to ISO 14001, an international standard for environmental management. Since 2010, we have reduced CO_2 emissions by 15.5% and energy consumption by 14.2%. Water consumption in 2013 was reduced by 6.1% per vehicle produced. Our plants are built and operated to be sustainable.



3 more plants achieved WCM gold level in 2013:
Pomigliano plant (Italy)
Tychy plant (Poland)
Tofas plant (Turkey)

(As of 31 December 2013)

Sustainability Report

At 31 December 2013

FIAT
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Energy consumption

Consuming energy responsibly is the premise behind Fiat Group's commitment to researching technologies that consume less energy as well as employing energy solutions with an ever-decreasing impact on the environment. This commitment is embodied by the World Class Manufacturing (WCM) program (see also pages 135) that dedicated a sub-pillar to energy in 2010 for improving the ability to identify and implement energy reduction measures and increase efficiency.

Primarily because of increased production volumes in the NAFTA region combined with adverse weather conditions in that area throughout the year, total energy consumption compared with the previous year increased slightly. Despite this, an overall downward trend is seen compared with the baseline year of 2010.

The factors contributing to the increase in energy use were mitigated by a series of interventions geared toward improving the energy efficiency of systems and equipment. This activity included overhauling or refurbishing the equipment in favor of more technologically advanced and efficient solutions that **saved approximately 600 TJ and averted 55,000 tons of CO_2.**

Direct and indirect energy consumption
Fiat Group worldwide (TJ)

	2013	2012	2011	2010
Plants	142	144	150	148
Electricity	21,272	20,520	21,274	21,182
Natural gas	20,957	18,278	19,253	19,440
Other fuels	1,234	1,322	1,617	1,395
Other energy sources	4,860	5,572	6,731	7,705
Total energy consumption	**48,322**	45,692	48,875	49,722

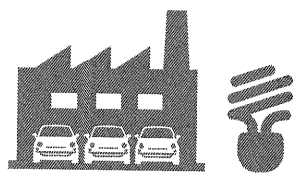
"Fiat should continue to think about projects to reduce the consumption of energy and decrease CO_2 emissions"

Stakeholder Engagement Event, Belo Horizonte (BR)

A major contribution also came from organizational measures, including process redesign, improving the use of plant operating capacity, operational changes and changing employee behavior through heightened energy awareness. These activities resulted in total **savings of about 1,400 TJ and avoidance of 125,000 tons of CO_2.**

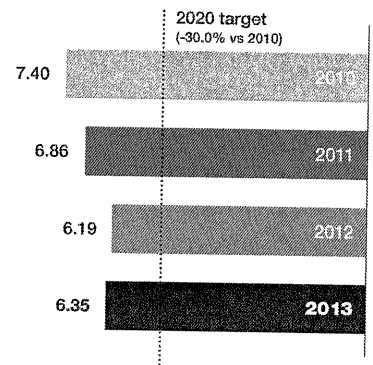
> GRI-G4 DMA, 27, EN3, EN6, EN19

At Mass-Market and Premium Brand assembly and stamping plants, the **energy consumption per vehicle produced** showed a small increase of 2.6% compared with last year, from 6.19 GJ per vehicle produced in 2012 to 6.35 GJ per vehicle produced.[1] This was principally due to the factors mentioned previously (increased production volumes in NAFTA region and adverse weather conditions). As with total energy, energy per vehicle produced has also shown an overall downward trend compared with the baseline year of 2010.



-14.2% vs 2010
in energy consumed
per vehicle produced worldwide

Direct and indirect energy consumption per unit of production
Mass-Market and Premium Brand assembly and stamping worldwide
(GJ per vehicle produced)



CO_2 emissions

Fiat Group's engagement in the fight against climate change is demonstrated by the general downward trend in CO_2 emissions from our production processes compared with the 2010 baseline. As with energy, the 2013 CO_2 results were negatively affected by the increased production volumes in the NAFTA region and the adverse weather conditions. Consequently, in 2013, total CO_2

GRI-G4 DMA, EN5, EN15, EN16

[1] *Number of vehicles produced and plant list are confidential for competitive reasons and therefore are not publicly published.*

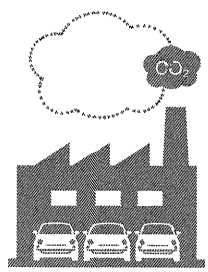
emissions increased by 5.4% at Group plants, for a total of about 4 million tons, despite the **2,400 energy projects** that were launched in 2013, **saving €62 million.**[1]
The **CO_2 emissions per vehicle produced** at the Mass-Market and Premium Brand assembly and stamping plants **decreased 15.5% in the last four years**, falling from 0.612 tons per vehicle produced in 2010 to 0.517 tons per vehicle produced.[2]

thanks to WCM energy projects

€62 mn saved

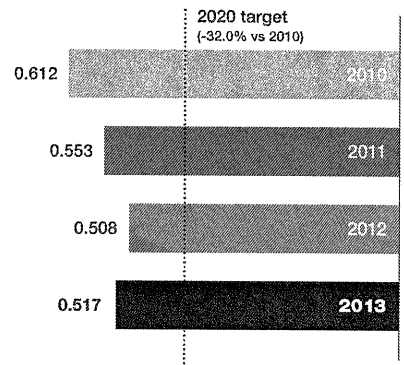
Direct and indirect CO_2 emissions
Fiat Group worldwide (thousands of tons of CO_2)

	2013	2012	2011	2010
Plants	142	144	150	148
Direct emissions	1,198	1,069	1,150	1,140
Indirect emissions	2,980	2,896	3,046	3,243
Total CO_2 emissions	**4,178**	**3,965**	**4,196**	**4,383**



-15.5% vs 2010 in CO_2 emitted per vehicle produced worldwide

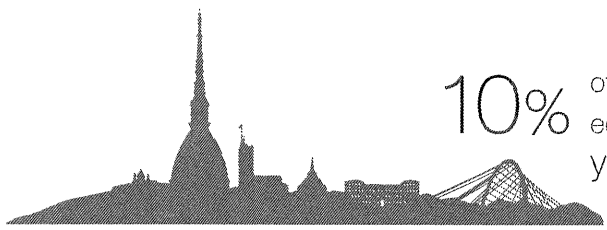
Direct and indirect CO_2 emissions per unit of production
Mass-Market and Premium Brand assembly and stamping worldwide (tons of CO_2 per vehicle produced)



> GRI-G4 EN15, EN16, EN18

(1) *Data is prorated to also include carry-over from projects launched in 2012.*
(2) *Number of vehicles produced and plant list are confidential for competitive reasons and therefore are not publicly published.*

In 2013, the Group continued to use renewable energy sources, slightly increasing the percentages reached by each company. In Europe, the vast majority of renewable energy purchased by the Group is certified by the supplier, while on the South American market electricity purchased is certified as coming almost entirely from hydroelectric sources. Furthermore, within the Group there are some plants that take advantage of solar energy to produce renewable energy for electricity or heating.



10% of Group energy from renewables, equivalent to the electricity consumed yearly in a city like Turin

Total energy from **renewable energies** used in Group production processes covered **20.9%** of the total consumption, excluding Chrysler Group, and 9.7% of total energy consumed, including Chrysler Group.

Paint process energy savings at the Sterling Heights Assembly Plant (SHAP)

Major energy savings are represented by the new paint shop at SHAP in the US. Painting demands more energy than any other stage of the production process in the automotive industry. In paint shops, the paint booth in particular consumes the most energy, since it requires around 100,000 cubic meters of air per minute at a specific temperature and humidity. Booths consume natural gas, electricity and water in order to meet stringent process control requirements.
SHAP's new paint shop covers approximately 100,000 square meters and was conceived to guarantee high energy efficiency, using a "cascading air / recirculating air" process to significantly reduce energy and water usage, designed to recirculate 90% of the air.
This innovation provides annual energy savings of approximately €1.3 million, avoiding approximately 24,000 tons of potential CO_2 emissions through energy reduction, while also resulting in a significant reduction in water use.

Water management

Water scarcity is one of the primary challenges facing governments, businesses and individuals in many parts of the world today. Because water scarcity also exposes companies to business risks, it is a factor that needs to be managed rapidly and effectively. Fiat Group sees water as one of the most important natural resources to be protected, so much so that it has drawn up **Water Management Guidelines** that apply to all Group companies.

GRI-G4 DMA

Green IT[1]

The Group is committed to reducing the environmental impact of its Information Technology (IT) activities by replacing its equipment so that it is more efficient.

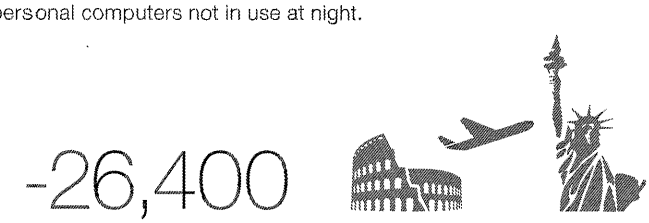
In 2013, a program to replace office hardware worldwide with equipment featuring high-efficiency power supply units continued. This resulted in saving 1,179 MWh of electricity and approximately 791 tons of CO_2 since 2010. The Group intends to further extend the initiative in 2014.

In addition, approximately 13,800 computer monitors were replaced with new EnergyStar equipment. These new monitors consume less electricity by 473 MWh, and CO_2 emissions by approximately 236 tons since 2010, while meeting the most stringent health, safety and environmental standards. This new equipment does not contain mercury, thus enabling environmentally friendly disposal and recycling.

In 2013, Chrysler Group initiated a program to replace all printing devices throughout US facilities. Multifunctional printing devices were deployed at the Auburn Hills Campus enabling printing, copying, faxing and scanning – all from one device. The new devices also streamline maintenance by automatically ordering toner when low levels are detected. According to plans, these devices will be deployed in the remaining US facilities in 2014. Along with improved functionality, it is expected to save over €750,000 a year.

In the Data Center area, which includes the computer systems that host applications and IT services, activities continued to reduce, replace, consolidate and virtualize servers, achieving a cumulative **reduction of 36,470 MWh and approximately 23,200 tons of CO_2 since 2010**. Further initiatives are planned in this field for 2014.

Finally, Chrysler Group in the NAFTA region saved cumulative 3,013 MWh of energy and about 2,200 tons of CO_2 since 2010 by automatically powering down personal computers not in use at night.

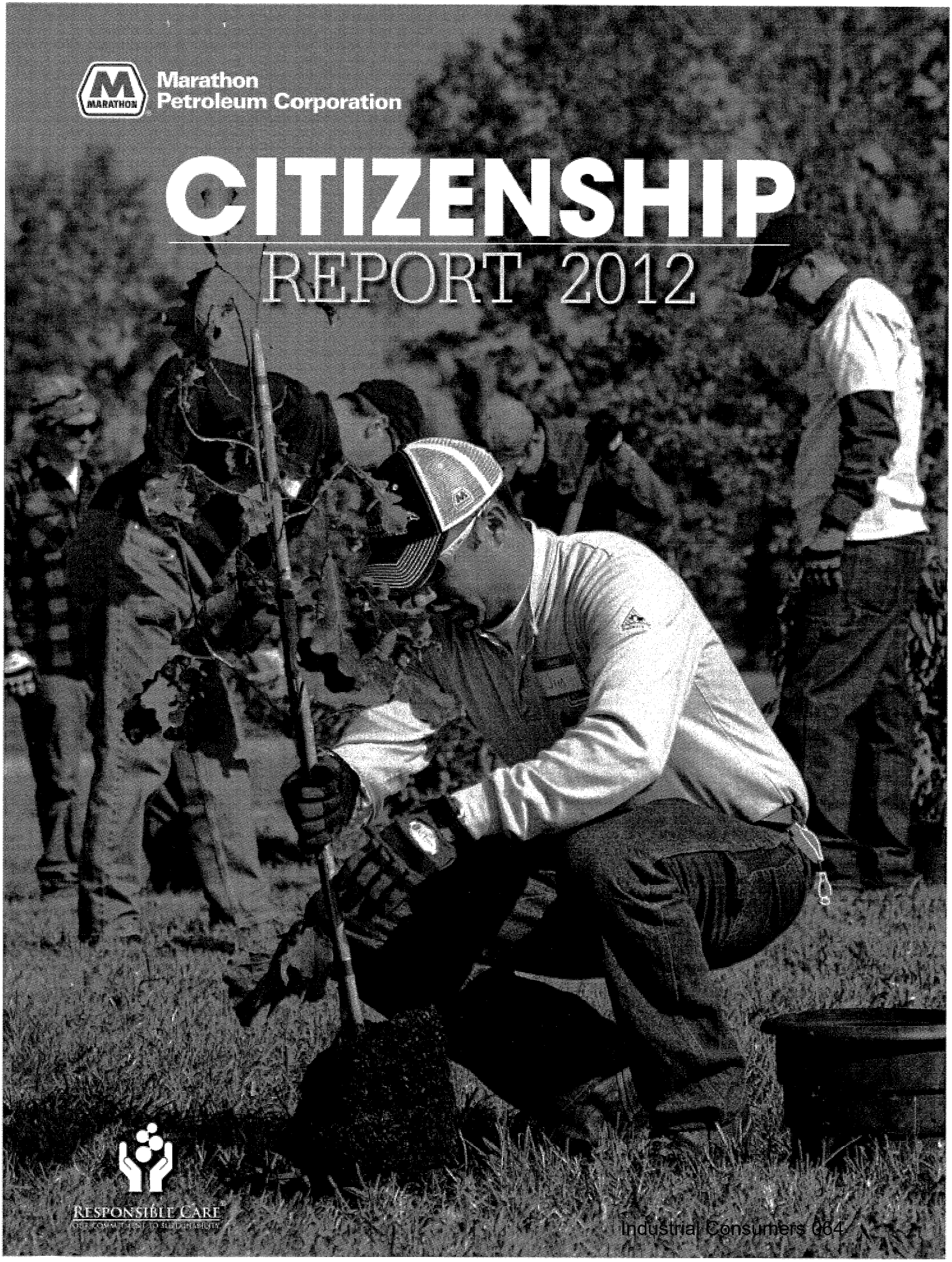


GRI-G4 EN6, EN19

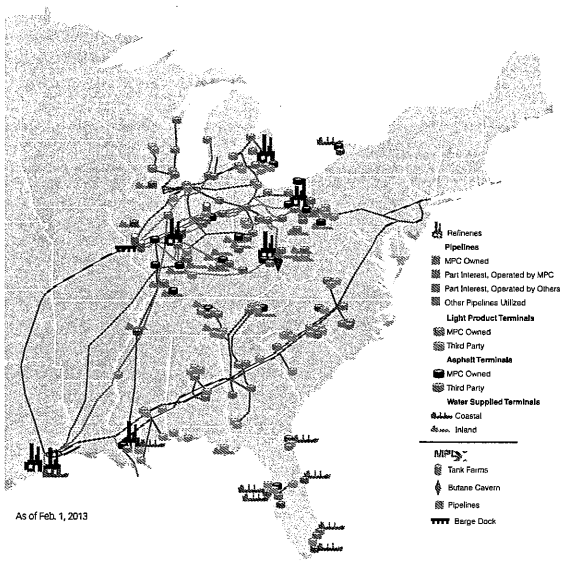
[1] *The conversion factor used for EMEA is 1 kWh = 0.52 kg of CO_2 (source: Carbon Trust, Conversion Factors, 2011), the conversion factor used for NAFTA is 1 kWh = 0.75 kg of CO_2 (source: Emissions & Generation Resource Integrated Database eGRID, 2012).*

TAB 9

MARATHON PETROLEUM COMPANY LLC



REFINING, MARKETING AND TRANSPORTATION NETWORK



As of Feb. 1, 2013

MPC LOGISTICS: By the numbers

67	Owned and part-owned light product terminals
61	Third-party light product terminals
21	Owned asphalt terminals
10	Third-party asphalt terminals
8,300	Approximate miles of pipeline that MPC owns, leases or has ownership interest
15	Inland waterway towboats
177	Owned barges
14	Leased barges
146	Owned transport trucks
1,971	Owned or leased railcars

CRUDE OIL REFINING CAPACITY

	BPCD	NCI*
Garyville	522,000	10.8
Galveston Bay	451,000	15.3
Catlettsburg	240,000	10.3
Robinson	206,000	10.6
Detroit	120,000	9.9
Texas City	80,000	8.4
Canton	80,000	9.0
TOTAL	**1,699,000**	**11.6****

* *Nelson Complexity Index (NCI) calculated per Oil & Gas Journal NCI formula*

** *Weighted Average NCI*

Source: MPC Data

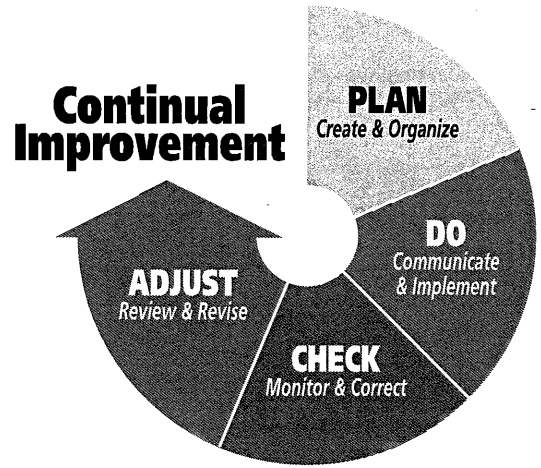
MPC's refineries are managed as one integrated system, optimizing feedstock and raw material inputs. This results in economies of scale that optimize capital expenditures and capacity.

WHAT WE MANUFACTURE

The core of MPC's business is manufacturing. We use feedstocks – crude oil and other materials – to produce a variety of refined products used by tens of millions of consumers. The products we and other refining companies manufacture are used directly or indirectly by virtually every single person in our nation. The fuels we produce get children to schools, bring produce to grocery stores and heat homes. Asphalt paves roads and shingles roofs. Lesser-known products like cumene or propylene are used to manufacture items that make our lives easier, safer, and more convenient, such as plastics, paints and inks, or flexible foam.

Below is a list of the **TOP TEN REFINED PRODUCTS MPC MANUFACTURED** in 2012, based on volume.

1. **Product:** Gasoline
   Used for: Transportation fuel
2. **Product:** Diesel
   Used for: Transportation fuel
3. **Product:** Asphalt
   Used for: Road paving and the manufacture of roofing shingles
4. **Product:** Refinery fuel
   Used for: Non-salable hydrocarbon materials used to fuel refinery units
5. **Product:** Petroleum coke
   Used for: Fuel in boilers and cement kilns. Some grades can be further treated and used in carbon anodes for aluminum smelting and as electrodes for electric arc furnaces.
6. **Product:** Propane
   Used for: Primarily a heating fuel
7. **Product:** Olefins (primarily propylene)
   Used for: The production of paints, household detergents, carpet fibers, foam insulation and auto parts
8. **Product:** Jet fuel
   Used for: Transportation fuel
9. **Product:** Heavy fuel oil/slurry
   Used for: Fuel for some utilities and marine vessels
10. **Product:** Aromatics (benzene, toluene, xylene)
    Used for: The production of paints, printing inks, adhesives, flexible foam, styrene and plastics



Because MPC's commitment to its core values is a powerful driver of its long-term success, we have woven continual improvement into the fabric of our performance.

We use the "Plan – Do – Check – Adjust" framework, aligned with the American Chemistry Council's Responsible Care® Management System.

Through the implementation of this system, we take a best-practices approach to health, environment, safety and security processes, integrating risk assessment and risk management into our business and operating planning cycles and decision-making processes.

We bolster our management system with performance-based standards that clearly delineate the outcomes we expect of ourselves. We regularly update these standards to reflect legislative or regulatory changes, and to incorporate lessons learned from audits or incident investigations. Continual improvement is the ongoing objective.

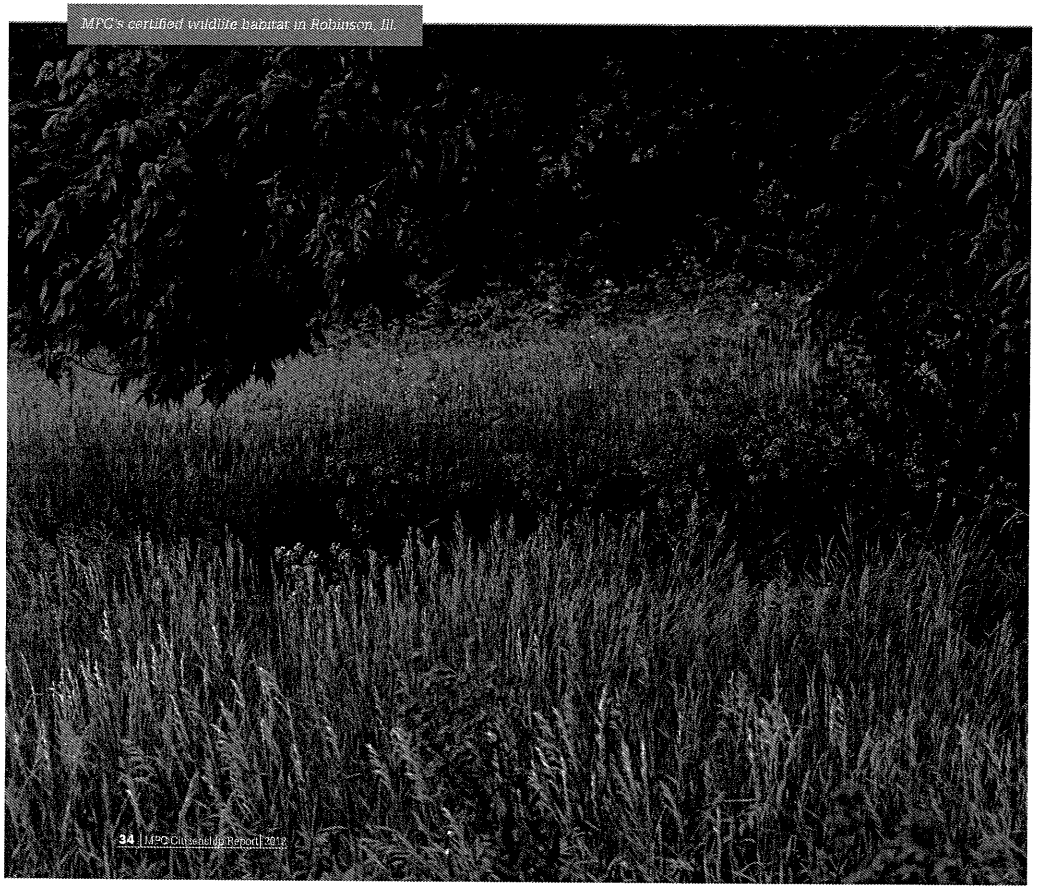
MPC's commitment to its values is safeguarded and driven by various empowered internal organizations, including Health, Environment, Safety & Security (HES&S); Diversity and Inclusion; Business Integrity and Compliance; Community Relations; Supplier Diversity; and Internal Auditing.

RESPONSIBLE CARE®
OUR COMMITMENT TO SUSTAINABILITY

ENVIRONMENTAL STEWARDSHIP

Our employees and our neighbors value clean air, land and water because we all share the same world. Just as important, we hold these resources in trust for our children and all generations to come. As we conduct the important business of meeting consumers' energy needs, we continually improve on our ability to protect the environment.

The metrics we report in this section represent pollutants and other emissions, waste generation, energy use and other measures. We have in place multiple systems and processes to minimize these impacts on the environment. Primarily because of larger throughput volumes, increased production, and higher activity levels, some of our metrics increased in 2012.

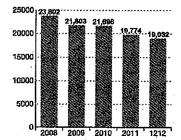


MPC's certified wildlife habitat in Robinson, Ill.

METRICS

CRITERIA AIR POLLUTANT EMISSIONS

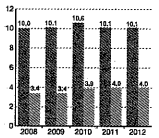
Tons



Discussion: Numbers for this metric have been recalculated and more accurately reflect MPC's emissions; as a result, the 2011 figure is one ton larger than reported in the 2011 Citizenship Report.

GREENHOUSE GAS (GHG) EMISSIONS

Million tonnes CO_2e



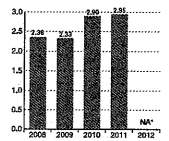
(a) Direct emissions are those associated with the combustion of hydrocarbons, venting sources and fugitive sources within MPC-operated facilities.

(b) Indirect emissions are primarily those associated with the use of purchased hydrogen, electricity and steam at MPC facilities.

Discussion: GHG emissions were recalculated in 2012 and these numbers reflect the new findings; most figures dropped by a small amount (approx. 100,000 tonnes CO_2e) compared to what we reported in our 2011 Citizenship Report, while one went up by a small amount.

TOXIC RELEASE INVENTORY (TRI)

Million pounds

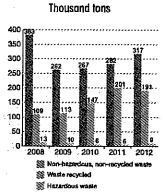


**2012 data is not available, due to the timing of required regulatory reporting.*

Discussion: The TRI increase in 2011 is the result of various factors. A newly identified TRI substance created by required emissions control equipment at two MPC refining operations is the largest contributor to the 2011 increase. The remainder is attributable to gradual production increases across our system, enhancements to our release estimate calculations and one-time events, such as on-site treatment of certain wastewater streams and treatment of soil as part of major construction projects.

WASTE GENERATION

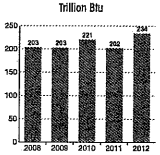
Thousand tons



Discussion: Hazardous and non-hazardous waste quantities increased in 2012 due to major maintenance activities at MPC refineries in Detroit, Mich.; Robinson, Ill.; and Canton, Ohio.

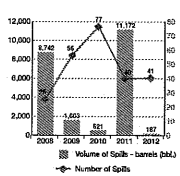
ENERGY USE

Trillion Btu



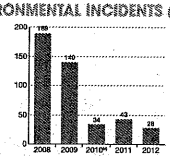
Discussion: The increase in 2012 energy use is primarily due to activities required to complete and integrate the Detroit Heavy Oil Upgrade Project. The figure for 2011 has been adjusted to reflect new information, and therefore is slightly different from what was reported in last year's Citizenship Report.

OIL SPILLS



Discussion: To provide a sense of perspective, MPC's total refinery throughput was 497 million barrels during 2012. The amount spilled represented about one-hundredth of an ounce for every barrel of throughput. However, our vision continues to be no accidents, no injuries, and no damage to the environment.

TIER 3 AND TIER 4 DESIGNATED ENVIRONMENTAL INCIDENTS (DEIs)*

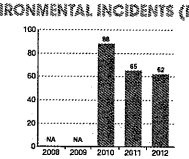


**The DEI is a measure adopted by MPC to capture several categories simultaneously. DEIs include releases to the environment (including to air, land or water), permit exceedances and agency enforcement actions. As such, DEIs include some metrics reported under other categories in this section, as well as metrics not reported elsewhere in this publication. Tier 3 and 4 DEIs are the most severe types of DEIs.*

(a) 2010 is the first year MPC began using a revised set of criteria to define a DEI.

Discussion: DEIs for 2008 through 2010 have been revised since the 2011 Citizenship Report to include Speedway DEIs. Speedway will be included in these and other reported DEIs going forward, including the Tier 2 DEIs reported in this section.

TIER 2 DESIGNATED ENVIRONMENTAL INCIDENTS (DEIs)*



**The DEI is a measure adopted by MPC to capture several categories simultaneously. Please see the glossary for additional detail on DEIs.*

Discussion: Tier 2 DEIs are less severe than Tier 3 and 4 DEIs. We report them here because we consider them a leading indicator that helps us to identify potential problems before they occur.

For more information about any of the terms on this page, please see the Glossary on page 48.

BEHIND THE **NUMBERS**

EPA RECOGNITION: Four MPC refineries earned the EPA's ENERGY STAR designation for superior energy efficiency in 2012. The facilities included our refineries in Canton, Ohio; Detroit, Mich.; Garyville, La.; and Texas City, Texas. MPC has earned 25 of the 31 ENERGY STAR recognitions the EPA has awarded to refineries.

ACC RECOGNITION: In addition to the EPA recognitions, MPC was honored by the American Chemistry Council's Responsible Care® Energy Efficiency awards. Our refineries in Robinson, Ill.; Garyville, La.; Detroit, Mich.; and Canton, Ohio were each recognized for projects that resulted in substantial environmental improvements, including reductions in GHG emissions.

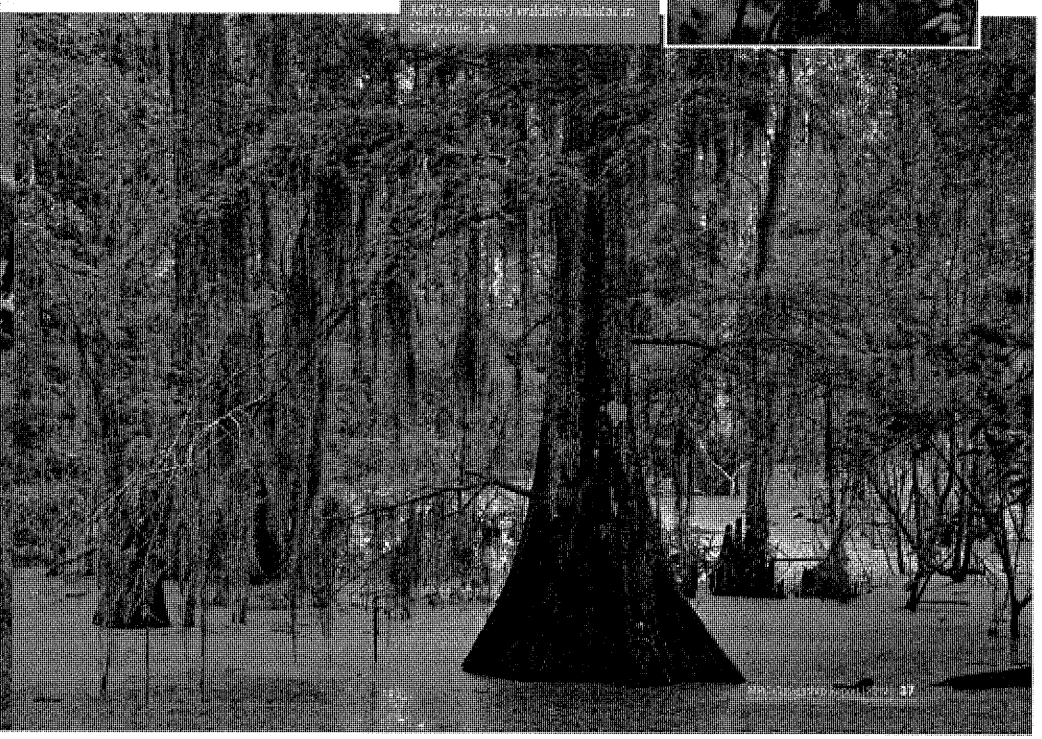
CONSENT DECREE AGREEMENT: MPC reached agreement on a consent decree with the EPA to reduce emissions at 22 flares at our refineries. The agreement came after more than three years of discussions with the EPA and tens of millions of dollars of investment by MPC to increase flare combustion efficiency. The result is emissions reductions of 4,720 tons per year, with another 530 tons per year reduction over the next five years.

NEW WILDLIFE HABITAT: More than eight acres of grassland at Marathon Pipe Line's station in **Heath, Ohio**, was transformed by employee volunteers, local Boy Scout Troop 9 and a Wildlife Habitat Council (WHC) biologist to provide food, shelter, water and space for native wildlife. Participants planted more than 150 native trees and bushes, while Boy Scouts built and placed bluebird and bat houses, mallard boxes and hawk perches. Employees are working toward WHC certification.

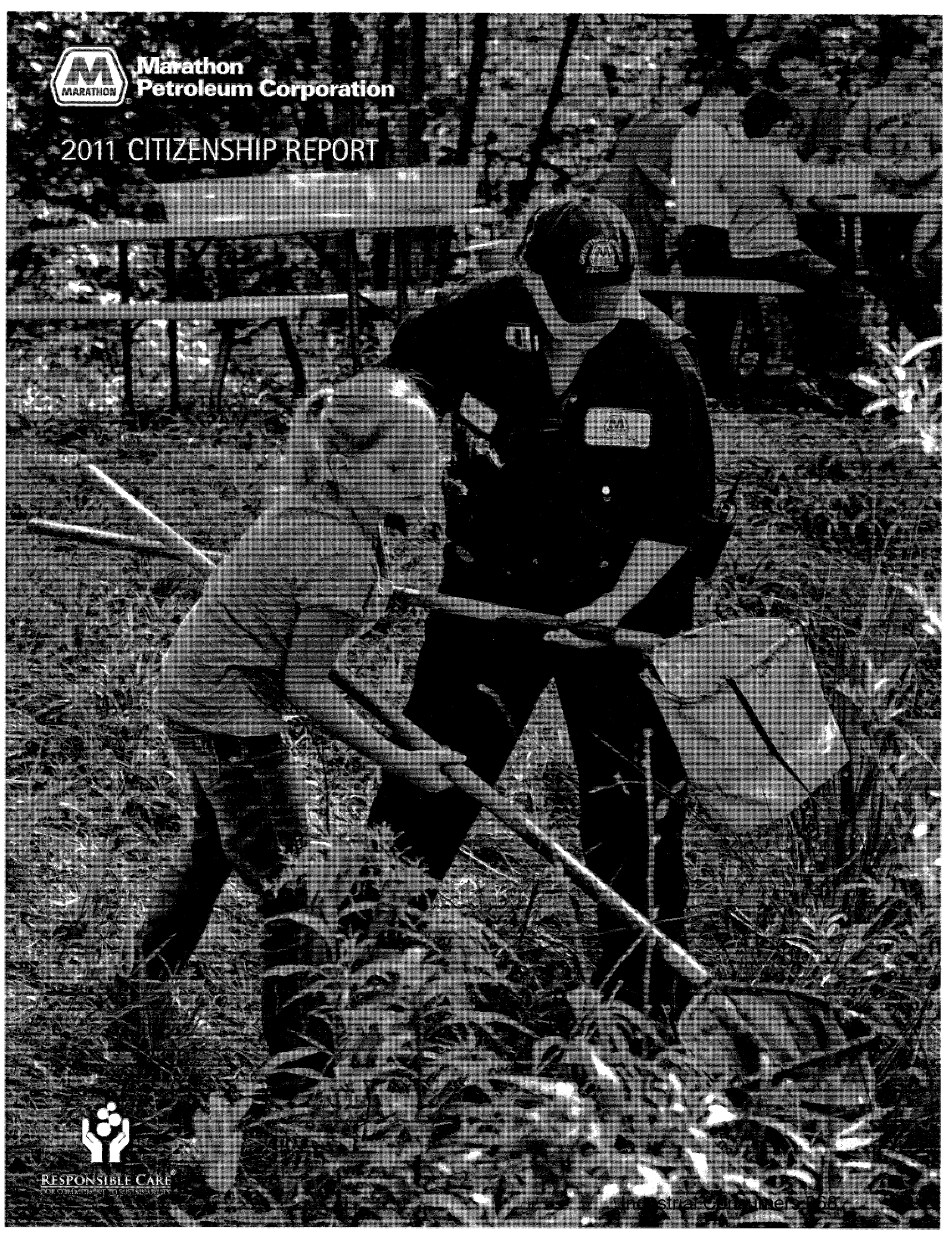
MPC CERTIFIED **WILDLIFE HABITATS**

MPC maintains 18 habitat sites certified by the Wildlife Habitat Council (WHC). These sites are certified as either Wildlife at Work or Corporate Lands for Learning sites, and in some cases both. The WHC's Wildlife at Work program provides a structure for cooperative efforts between management, employees and community members to create, conserve and restore wildlife habitats on corporate lands. Corporate Lands for Learning is a certification program that gives us a framework for opening our habitats to members of the community for educational purposes.

MPC employees volunteer to plant a wildlife habitat in Heath, Ohio.

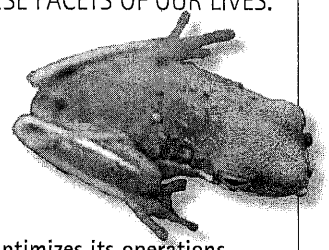


MPC-certified wildlife habitat in Garyville, La.


Marathon
Petroleum Corporation
2011 CITIZENSHIP REPORT
RESPONSIBLE CARE®

ENVIRONMENTAL STEWARDSHIP

MPC EMPLOYEES VALUE CLEAN AIR, CLEAN WATER AND CLEAN LAND IN THE COMMUNITIES WHERE THEY LIVE AND WORK; THE COMPANY REFLECTS THEIR VALUES BY PROTECTING THESE FACETS OF OUR LIVES.



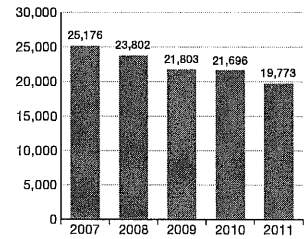
As MPC expands and optimizes its operations to meet growing energy demand in the U.S. and international markets, we keep in mind our Responsible Care®-driven vision of no accidents, no injuries and no harm to the environment. MPC's commitment to environmental stewardship is a natural extension of its culture of continual improvement; when refineries, terminals, transportation systems and office complexes are safe and efficient, they are also environmentally sound.

In 2011, the environmental stewardship metrics that MPC reports reflected our ongoing efforts to increase efficiency even as we expand our processing capacities in order to better meet the needs of fuel consumers in the U.S. and in overseas markets. With the expansion of our Garyville, La., refinery completed toward the end of 2009 – as well as many other factors, including global and domestic fuel demand – our crude oil throughput increased from 2009 to 2010, and again in 2011. This increase is reflected in energy consumption, given the energy-intensive nature of the refining business.

Despite the increases in crude oil throughputs, we were able to continue reducing our criteria air pollutant emissions and the volume of waste we recycled has risen significantly over the past few years, while the volume of hazardous waste we dispose of has continued to decline.

CRITERIA AIR POLLUTANT EMISSIONS

Tons



From 2007 to 2011, we have reduced our total criteria air pollutant emissions by more than 20 percent.

Why it matters

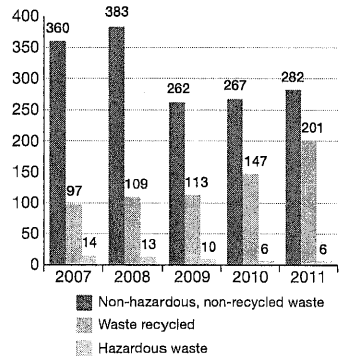
MPC reports total emissions of volatile organic compounds, nitrogen oxides, sulfur oxides, carbon monoxide and particulate matter. We work to reduce these emissions in compliance with relevant regulations, and toward our objective of protecting the health of our employees and their families, friends and neighbors in the communities where our facilities are located.

How we improve

As a company committed to the Responsible Care vision of no environmental harm, MPC works toward continual improvement of its emissions performance. We evaluate emissions-reduction opportunities for new facility construction and for existing operations. Reduction efforts include cost-effective energy efficiency measures, incident prevention, prudent operations to reduce flaring and use of best control practices.

WASTE GENERATION

Thousand tons



MPC waste disposal volume has
decreased over the
last several years.
Hazardous waste has declined from
more than 14,000 tons in 2007 to
about 6,000 tons in 2011,
while recycling has increased
during that same period.

Why it matters

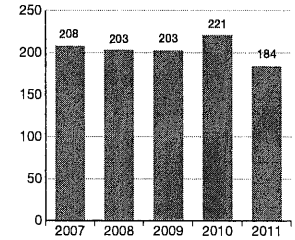
In addition to the cost-advantages of reducing the amount of waste MPC must dispose of, less waste means higher operational efficiency and less material sent to landfills and hazardous waste disposal sites.

How we improve

All MPC facilities have pollution prevention and waste minimization programs in place, whether it's a refinery or an office building. These plans are designed to identify opportunities to reduce waste generation and drive continual improvement in waste disposal activities.

ENERGY USE

Trillion Btu



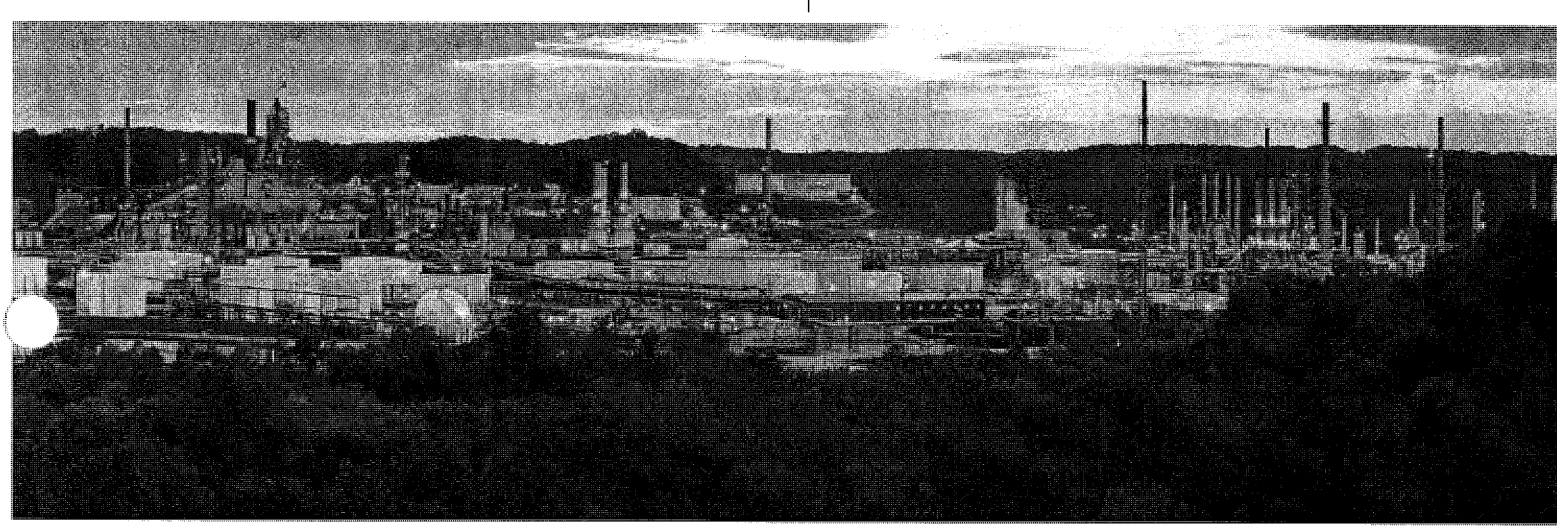
MPC's energy use increased from 2009 to 2010 primarily due to completion of a major expansion project at our Garyville, La., refinery in late 2009.
Our energy use dropped
from 2010 to 2011
due primarily to the sale of the St. Paul Park, Minn., refinery and related assets in late 2010.

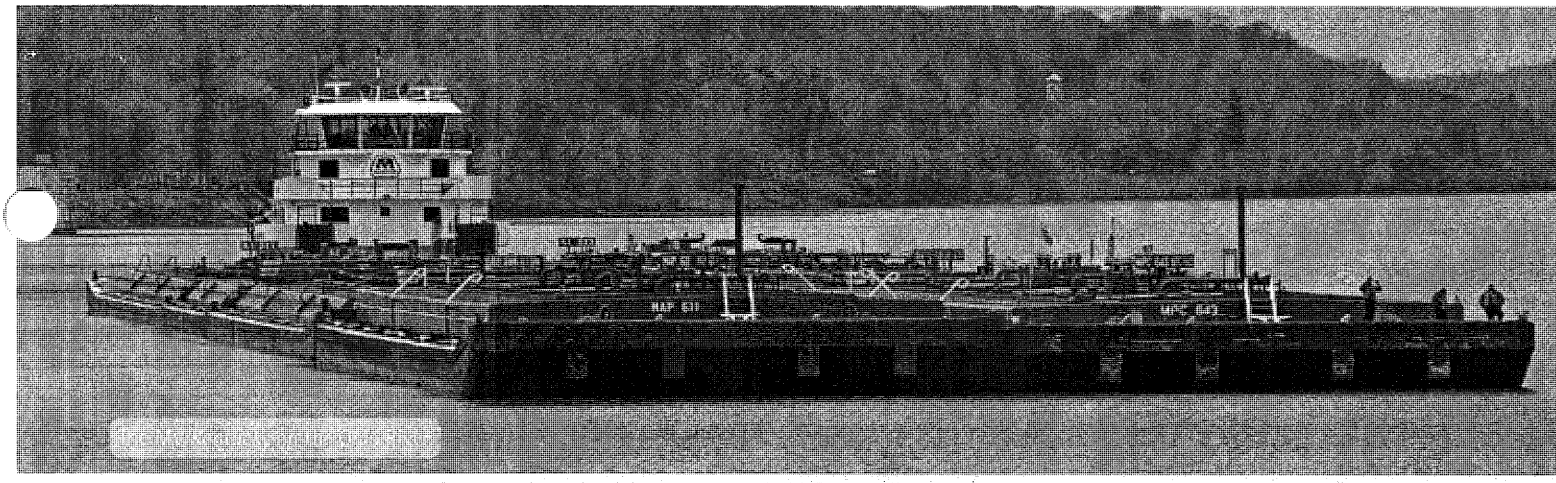
Why it matters

As a manufacturing company, MPC is always seeking ways to increase operational efficiency and reduce costs. Energy use is a reliable measure of efficiency. Reduced energy use also allows us to reduce emissions and conserve natural resources.

How we improve

Because of the cost and environmental benefits inherent in reducing energy consumption, MPC has an Energy Efficiency Team in place to identify efficiency opportunities and recommend measures to save energy. We implement process improvements and technological solutions that increase energy efficiency across all of our operations. Just two examples include installation of energy-efficient lighting at retail and office locations, and ensuring that our plant expansions – such as those at our Detroit, Mich., and Garyville, La., refineries – incorporate the most advanced energy-efficient technologies appropriate to our needs. By the end of 2011, the U.S. Environmental Protection Agency had recognized MPC refineries with 21 of the 26 ENERGY STAR designations it has awarded to refineries since 2005.





Energy efficiency

IN 2011, FOUR MPC REFINERIES EARNED THE U.S. ENVIRONMENTAL PROTECTION AGENCY'S (EPA) ENERGY STAR DESIGNATION.

To attain EPA ENERGY STAR status, applicants must meet two stringent requirements: first, the site must perform in the top quartile for energy efficiency, and second, it must have no unresolved environmental compliance actions from either state or federal regulators.

The MPC plants that earned the designation in 2011 were our refineries in Canton, Ohio; Detroit, Mich.; Garyville, La.; and Texas City, Texas. Only one other U.S. refiner received the 2011 recognition. By year-end 2011, EPA ENERGY STAR recognitions had been issued to refineries only 26 times in the U.S. since the award's inception in 2005. MPC has received 21 of those 26 awards.

Marine environmental awards

MPC'S COMMITMENT TO OPERATIONAL EXCELLENCE AND ENVIRONMENTAL STEWARDSHIP IS BASED ON OUR VALUES.

Our Marine Transportation organization has been recognized for excellence in this area by the Chamber of Shipping of America (CSA), which presented its Environmental Achievement Award to 12 MPC Marine vessels in 2011.

To be eligible for the CSA Environmental Achievement Award, vessels must have operated for at least two years with no reportable spills, no U.S. Coast Guard or port state citations for marine pollution violations, and no violations of state and local pollution regulations.

Marine Transportation also has won five William M. Benkert Marine Environmental Protection Awards from the U.S. Coast Guard since 2002. The Benkert Awards recognize outstanding achievements in marine environmental protection that go beyond mere compliance with industrial and regulatory standards.

Maintaining response capabilities

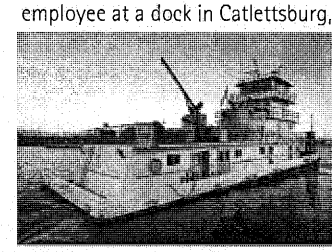
MPC IS COMMITTED TO CONTINUALLY STRIVING TOWARD NO ACCIDENTS, NO INJURIES AND NO HARM TO THE ENVIRONMENT, BUT WE ARE ALSO PREPARED TO RESPOND TO INCIDENTS QUICKLY AND THOROUGHLY WHEN THEY TAKE PLACE.

The company's Emergency Preparedness Group (EPG) is responsible for maintaining our readiness to respond, which it does by establishing clear processes and procedures for how incidents are handled based on their severity and type, training responders throughout the company and conducting regular drills that bring all the components together.

EPG conducts dozens of drills each year to exercise various aspects of the company's emergency response capabilities. Many of these bring together our own employees with representatives of federal, state and local agencies. These drills provide an opportunity for government stakeholders and MPC emergency responders to interact cooperatively in the context of our incident command structure, further enhancing our working relationships with the agencies.

EPG also coordinates one major drill each year that brings together several company organizations to practice responding to a major incident. These major drills, usually lasting three days, include participation by representatives of the federal government – typically the U.S. Coast Guard – as well as state and local agencies and officials. In 2011, the major drill was conducted in Florida and Louisiana simultaneously to determine the company's ability to accommodate two separate, major incidents.

Left: The MV *Louisville* on the Ohio River. Right: An MPC employee at a dock in Catlettsburg, Ky.

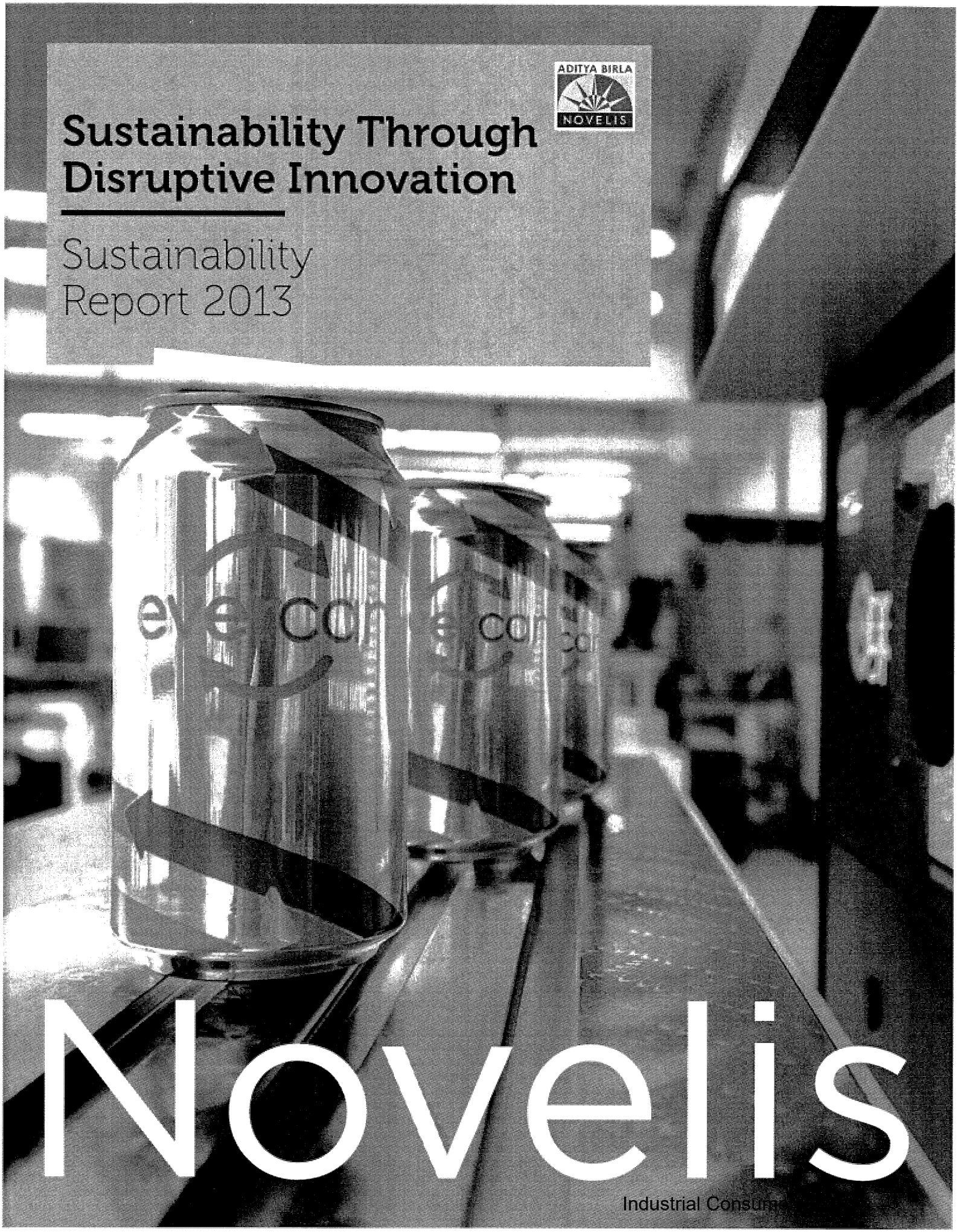


TAB 10

NOVELIS CORPORATION

Sustainability Through Disruptive Innovation

Sustainability Report 2013



Performance Summary

In 2011, we established a set of corporate-wide 2020 sustainability targets, using the average of fiscal years 2007–2009 as the baseline where relevant. The arrows in the graphics below represent our progress in FY13 compared to both our baseline and our FY12 performance.

Manufacturing

Our Operations and People

Our sustainability strategy calls for driving improvements in our manufacturing operations – from our natural resource use, to developing our people, to strengthening engagement with our communities. This section discusses how we are making this happen through our *One Novelis* culture, our management systems and the expansion of our operations. It also covers our FY13 performance and initiatives in the manufacturing-related areas of environment, people and community.

Our Key Aims

- Maintain safe, efficient operations that minimize natural resource use
- Ensure an adequate supply of talent
- Maintain our social license to operate

Our Key Challenges

- Driving energy efficiencies even as we expand our operations and evolve our product mix
- Finding new ways to process the increased dross we will generate as our recycled content increases
- Reducing our safety case rate all the way to zero
- Attracting enough qualified engineers to meet our needs

Our Targets		Baseline (FY07–FY09 Average)	FY13 Performance	FY20 Target
2020 Operational Targets				
Energy usage	Reduce by 39% per metric ton of sales	12.4 GJ/mt	**10.0 GJ/mt**	7.6 GJ/mt
Water usage	Reduce by 25% per metric ton of sales	3.7 m^3/mt	**3.1 m^3/mt**	2.7 m^3/mt
GHG emissions	Halve our absolute amount (Scope 1, 2 and 3)	21M mt	**18M mt**	11M mt
Landfill	Zero landfilled waste	62.5K mt	**55.6K mt**	0K mt
2020 People Targets				
Safety	Zero recordable injuries	1.01	**0.60**	0
Employees	100% of eligible employees receive annual performance feedback	NA	**52%**	100%
	World-class leadership development program, benchmarked in the top 10% of companies	NA	**In progress**	Benchmarked in top 10%
Community	100% of operations have implemented local community engagement process	NA	**In progress, but all operations have Novelis Neighbor programs**	100%
Code of Conduct	Employee and Supplier Codes rolled out, process in place for noncompliance	NA	**In progress**	100%

See p. 29 for our full performance summary.

Energy Use

Figure 9 Scope 1, 2 and 3 GHG Emissions (metric tons CO_2e)

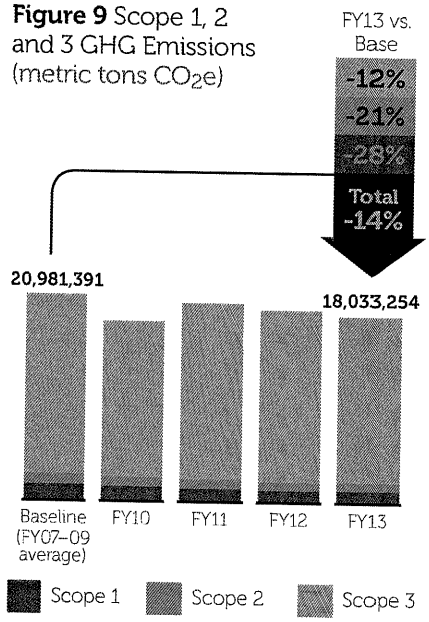
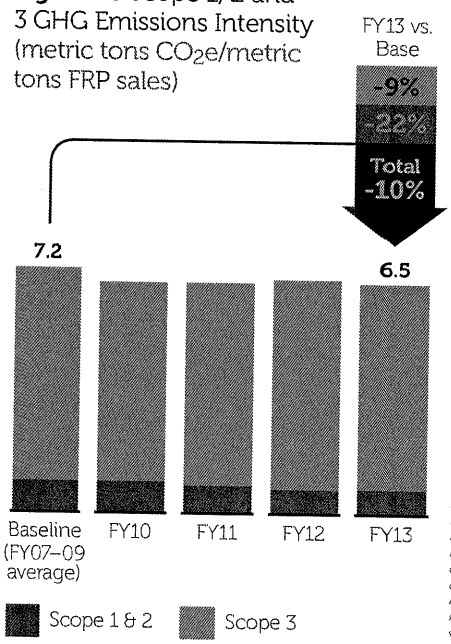


Figure 10 Scope 1, 2 and 3 GHG Emissions Intensity (metric tons CO_2e/metric tons FRP sales)



Complete performance data can be found at **www.novelis.com/sustainability**

We use several sources of energy in the production and delivery of our aluminum products (see Figures 11, 12 and 13). The majority of energy usage in our facilities occurs at our recycling casting centers, during the process of rolling hot and cold aluminum, and at our small Ouro Preto smelter in South America. (At the end of FY13, we shut down one pot line at the smelter.) Natural gas used directly at our facilities (particularly for melting) and purchased electricity (particularly for rolling) are the most significant types of energy use for Novelis, supplying 94% of our total energy needs by cost. We also use fuel oil, transport fuel and other energy sources. Our South American segment has its own hydroelectric facilities providing power to the Ouro Preto smelter, which meet approximately 66% of its electricity requirements and account for 19% of the company's overall direct electricity usage. Outside of South America, we purchase electricity from third-party suppliers. Of the energy we purchase, 39% comes from renewable sources and 19% from nuclear power (see Figure 13).

We have set a goal to decrease our energy intensity by 39% by 2020 from our FY07–09 average baseline. As of FY13, our energy intensity has decreased 19% from the baseline, though it was essentially flat in FY13 alone (see Figure 15). Our total energy use has followed a similar path – decreasing 23% since our baseline, but down only 1% in FY13 (see Figure 14).

Figure 11 Direct and Indirect Energy Use, FY13

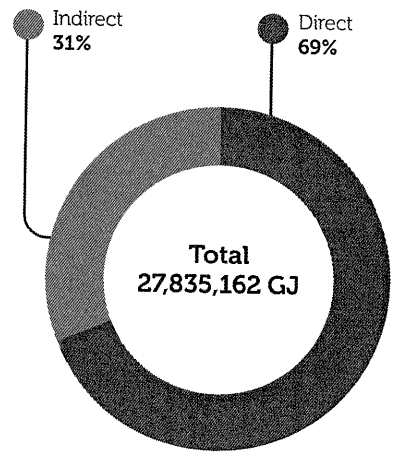


Figure 12 Types of Direct Energy Use, FY13

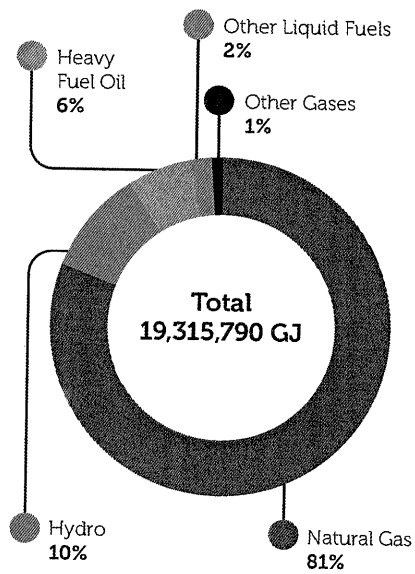


Figure 13 Types of Indirect Energy Use, FY13

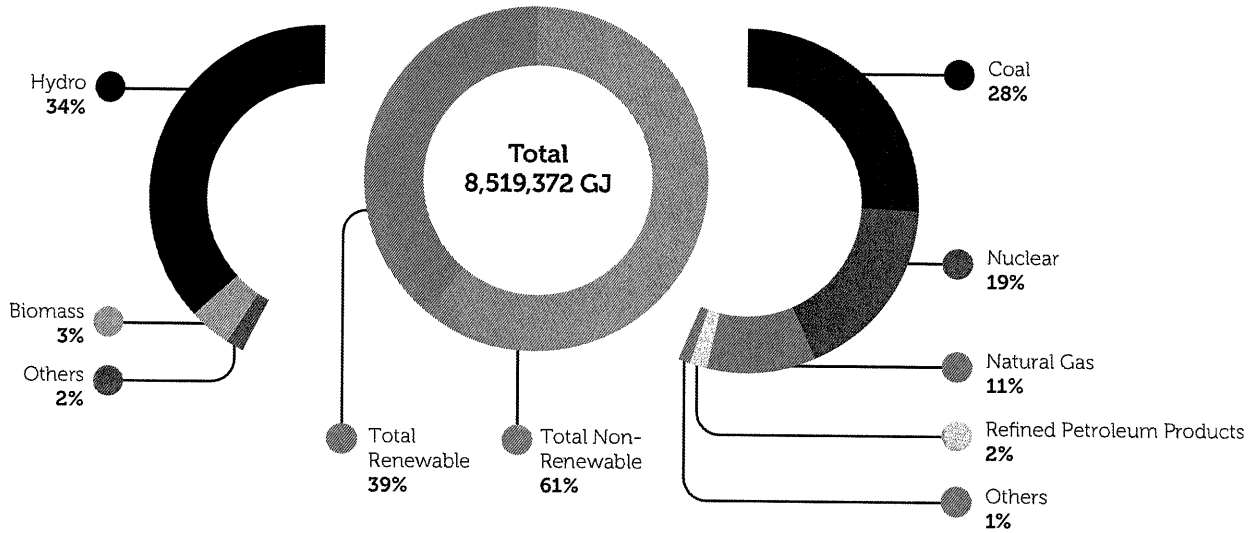


Figure 14 Total Direct and Indirect Energy Use (GJ)

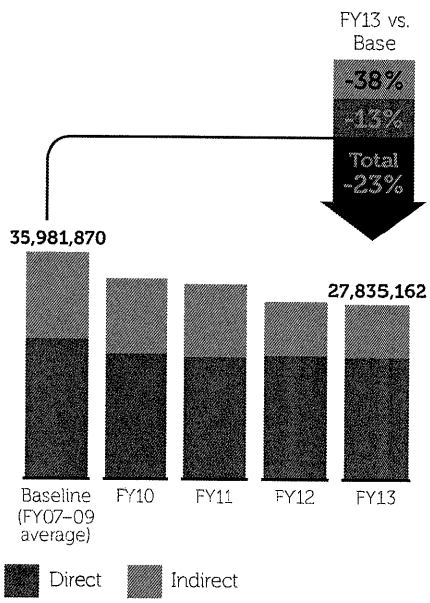
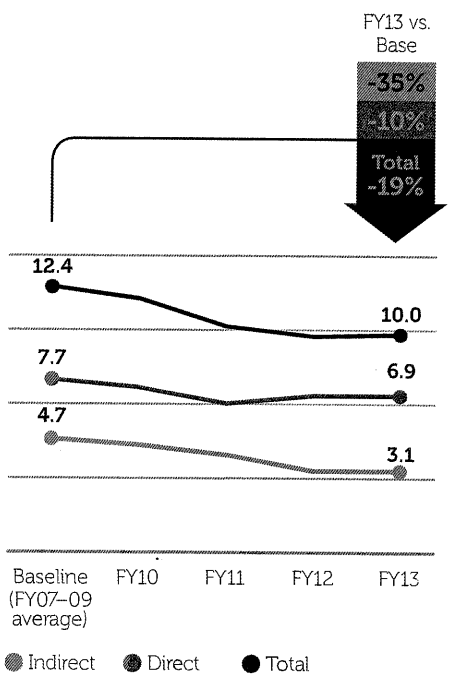


Figure 15 Energy Intensity (GJ/metric ton FRP sales)



Complete performance data can be found at **www.novelis.com/sustainability**

Progress toward our energy intensity goal is affected by a variety of competing factors. Energy-efficiency projects drive our results in the right direction, while increases in recycling and changes in product mix and sales offset those improvements. For example, our manufacturing processes tend to run most efficiently when they operate at close to capacity; in times of lower output, then, our energy intensity performance may fall off. In FY13, our energy-efficiency projects, along with the closure of one of the two smelting pot lines in South America, resulted in energy reductions – but not enough to offset other challenges. Factors driving up our energy use in FY13 included our increased recycling, the expansion of our operations around the globe (which take time to get to full capacity due to start-up procedures and trial runs), our changing product mix (including products that require more finishing and harder alloys, which take more energy to roll) and unplanned operational outages. With our expansions across the globe reaching full capacity over the next year or so, we expect that efficiency improvements will follow.

How We Are Managing Our Energy Use

We are taking a variety of actions to help reduce our energy use and improve our energy efficiency. For example, our plants are working to improve the metering and monitoring of their energy use. The largest energy users have begun monthly energy reporting by major process operations (i.e., remelt, casting, rolling and finishing). Enhanced monitoring and reporting allows us to compare and benchmark in detail the performance of similar operations.

In FY13 we established energy specifications for capital projects and conducted energy assessments at seven plants. All other Novelis plants in North America and Europe will conduct assessments in FY14. And, we are nearing completion of our first formal energy training program, which will cover a variety of issues relating to energy efficiency and management.

We have also been working to increase the sharing of best practices across the company in the areas of remelt, lighting and compressed air, in particular. In FY13 we documented, published and shared 30 best practices. Our Global Energy Team is responsible for addressing and implementing the projects with the greatest amount of return at each plant to ensure that we are taking steps to increase efficiency and meet our annual energy targets, as well as stay on track to meet our 2020 target.

How We Are Optimizing Our Operations

In FY13, our plants undertook a variety of specific initiatives, described below, to drive down energy use and GHG emissions. We estimate that initiatives like these resulted in energy savings of 420,000 gigajoules (GJ), which is equivalent to about 1.5% of our total energy use in FY13.

We are looking to improve efficiency at every step and to evaluate our operations as a whole to improve performance. For example:

- In our operations, large furnaces melt aluminum and alloying agents with heat generated by burning fuel. During fuel combustion, an optimal air-to-fuel ratio ensures that all the fuel is completely burned. We have learned to adjust the fuel supply with increasing levels of precision in order to ensure that burners do not release more fuel than can be optimally burned.
- We have also improved the way we add alloys to molten aluminum, such that we reduce the number of times the furnace is opened and minimize the heat that escapes.
- Molten aluminum must be maintained at a certain temperature to be transferred to the next step in the process. Limiting upstream operations until downstream capacity is available has resulted in reduced holding times during which the aluminum must be maintained in a molten state.
- After aluminum is rolled, heat is sometimes used to alter its physical properties, a practice called annealing. Heat may also be used to dry paint lacquer. We have increasingly planned production such that processes with similar temperature requirements are conducted in succession, limiting the energy associated with raising and lowering temperatures.

We make every effort to maintain and optimize our existing equipment, but as new technology is discovered we seek to implement the most energy-efficient upgrades. The largest use of natural gas in our operations is for melting aluminum scrap and producing specific alloys. Consistently advancing our furnace burner technology is therefore a priority, and we have undertaken several large-scale projects to upgrade and replace burners in the past year. We are also working to upgrade the wide variety of motors in use in our operations. Motors with variable-speed drives allow for more-efficient use of electrical energy and enable us to respond quickly to ever-shifting energy demands.

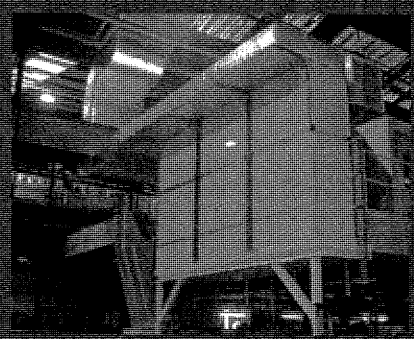
A lighting upgrade improved efficiency and quality at our plant in Berea, USA

In Action...

Energy-Efficiency Projects

We have implemented an array of innovative solutions at specific plants.

Ulsan (South Korea)
In our Ulsan plant, we are in the midst of converting from oil to natural gas, which has several benefits: reduced costs, less exposure to oil price fluctuations, higher energy efficiency due to using regenerative burners, and 36% fewer GHG emissions. This change in fuel, along with an upgrade in the burners, resulted in a reduction of more than 7000 metric tons of CO_2e in FY13 alone, nearly 30% of our total global savings for all energy-efficiency projects.



Sierre (Switzerland)
In most of our facilities, conventional chiller systems are used to air-condition electrical rooms, offices and control rooms. At our Sierre plant, another solution has been implemented: it uses fresh air and cold underground water to maintain a comfortable ambient temperature.

Logan (USA)
Nitrogen gas is used for various process-related operations in our plants. Our Logan facility had an onsite nitrogen plant to support this need. But we recently realized that delivery of liquid nitrogen was more efficient than onsite production. Elimination of the nitrogen plant will reduce electrical load requirements during peak demand.

Yeongju (South Korea)
At the end of our manufacturing processes, aluminum is rolled into coils for shipment to customers. When the coils are rolled, the aluminum is hot and must be cooled using fans. Typically, the temperature of the coils is measured manually at periodic intervals. At our Yeongju plant, sensors have been installed to automatically shut off the fans immediately when the coils are sufficiently cooled.

Nachterstedt (Germany)
At our Nachterstedt plant, we installed a network of temperature sensors to control and optimize the infrared heating system throughout the plant; this system was intended to ensure appropriate temperature control in different areas. We found that the system was not working properly, however, and by optimizing the location of the sensors for it to work correctly, the plant's natural gas consumption was reduced by half compared to similar winter months in past years.

Water Use

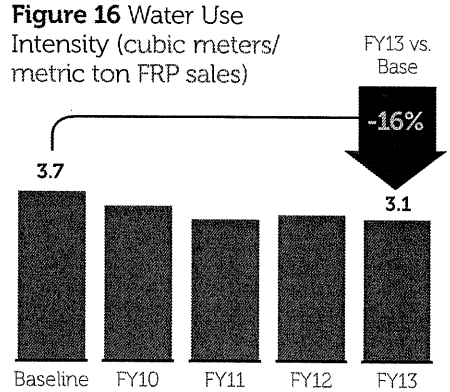
Relative to companies in other industries, our operations are not very water-intensive. However, we are mindful of the increasing scarcity of water globally, and we are working hard to make our operations more water-efficient.

The process in our operations that uses the most water is the casting of ingots after remelting recycled materials. As we increase our recycling of scrap aluminum (in line with our goal to use more recycled inputs), we will do more ingot casting, which has the potential to push up our water use. We thus have been working to use water in this process more efficiently (primarily by maximizing cooling water re-use), and we have set a goal to reduce our water use intensity by 25% by 2020.

The smelting process by which primary aluminum is made is more water-intensive than the recycling process, so even if Novelis' absolute water use rises the more we recycle, the overall life cycle water use for our products will decrease.

Our primary focus for water in FY13 was to establish a global water team to develop a global water strategy,

Figure 16 Water Use Intensity (cubic meters/ metric ton FRP sales)



Complete performance data can be found at **www.novelis.com/sustainability**

TAB 11

AIR PRODUCTS AND CHEMICALS, INC.

Energy Efficiency

Greenhouse Gases and Energy Efficiency

Energy Savings

Using calendar 2007 as our baseline year, we have intensity-based energy efficiency goals for our large air separation units (ASUs) and hydrogen, carbon monoxide and snythesis gas (HyCO) facilities, representing approximately 80 percent of our company's total global energy requirements. These goals are meant to achieve a seven percent reduction in energy consumption at our ASUs per quantity of gas produced and a seven percent reduction in fuel and feedstock consumption per quantity of hydrogen produced at our HyCO plants by 2015.

In order to achieve this, we have committed to accelerating efficiency improvements in our existing assets and using state-of-the-art efficiency for new production investments. Air Products' Global Operations, Engineering and Technology teams provide technical resources to identify, develop and implement energy reduction opportunities across all regions.

2015 Intensity-Based Energy Goals
(2007 baseline):

7% reduction for large ASUs

7% reduction for HyCO facilities

If we remain on track to achieve our 2015 goal of reducing our energy consumption in our ASUs and HyCOs by 7 percent, it could be worth more than $100 million.

Initiatives related to renewable energy

Air Products is focused on delivering productivity, energy efficiency, and making our customers more sustainable. We use our core technology and product strengths to bring cost effective solutions to our customers that help reduce their energy consumption and environmental impact. For example, application of our oxyfuel combustion technologies in the manufacture of cement, glass, aluminum and steel enables customers to improve fuel efficiencies up to 65% while reducing emissions of NOx and particulate matter. We are using another oxygen-enriched technology for an advanced gasification facility in Tees

Valley, UK that will convert waste to power for up to 50,000 homes. We also supply products that support renewable energy, such as high purity process gases and cleaning agents and services that support the production of solar cells and high efficiency lighting, and curing agents for epoxy resins used in high strength-to-weight composites for wind turbines. Likewise, hydrogen has many energy benefits, from removing sulfur from sour crude oil that enables refiners to meet fuel emissions standards, to increasing the amount of fuel that can be produced from a barrel of crude, to hydrogen's use as an emission-free transportation fuel. It can also be used to produce biodiesel from renewable feedstocks. Due to these benefits and our focus on the environment, Air Products continues to look for methods to produce hydrogen from renewable and low carbon sources, such as biomass and municipal wastewater.

At our corporate headquarters, we ...

- **Recycled:**
  191 tons of scrap metal
  211 tons of office paper
  35 tons of wood pallets
  30 tons of scrap wood
  57 tons of cardboard
  2.6 tons of fluorescent lamps
- **Achieved:**
  a total recycling rate of 60%
- **Composted:**
  over 6 tons of food waste, a 50% increase from the prior year
- **Reduced:**
  energy consumption at our IT data centers by 24%
- **Generated 2MW of electricity from our solar farm:**
  reducing CO2 emissions by 2,000 tons, the emissions equivalent of taking 400 cars off the road for a year

Back to Greenhouse Gases

For Customers
APDirect
Portal
MSDS
Library
Safetygrams
Gas
Facts
Sample
Requests
FDA
Letters
Customer
Support
Overview
Distributor
Services
Gases
U.S.
Technology
Licensing
Worldwide
Locations
&
Contacts
Quality
and
Certifications

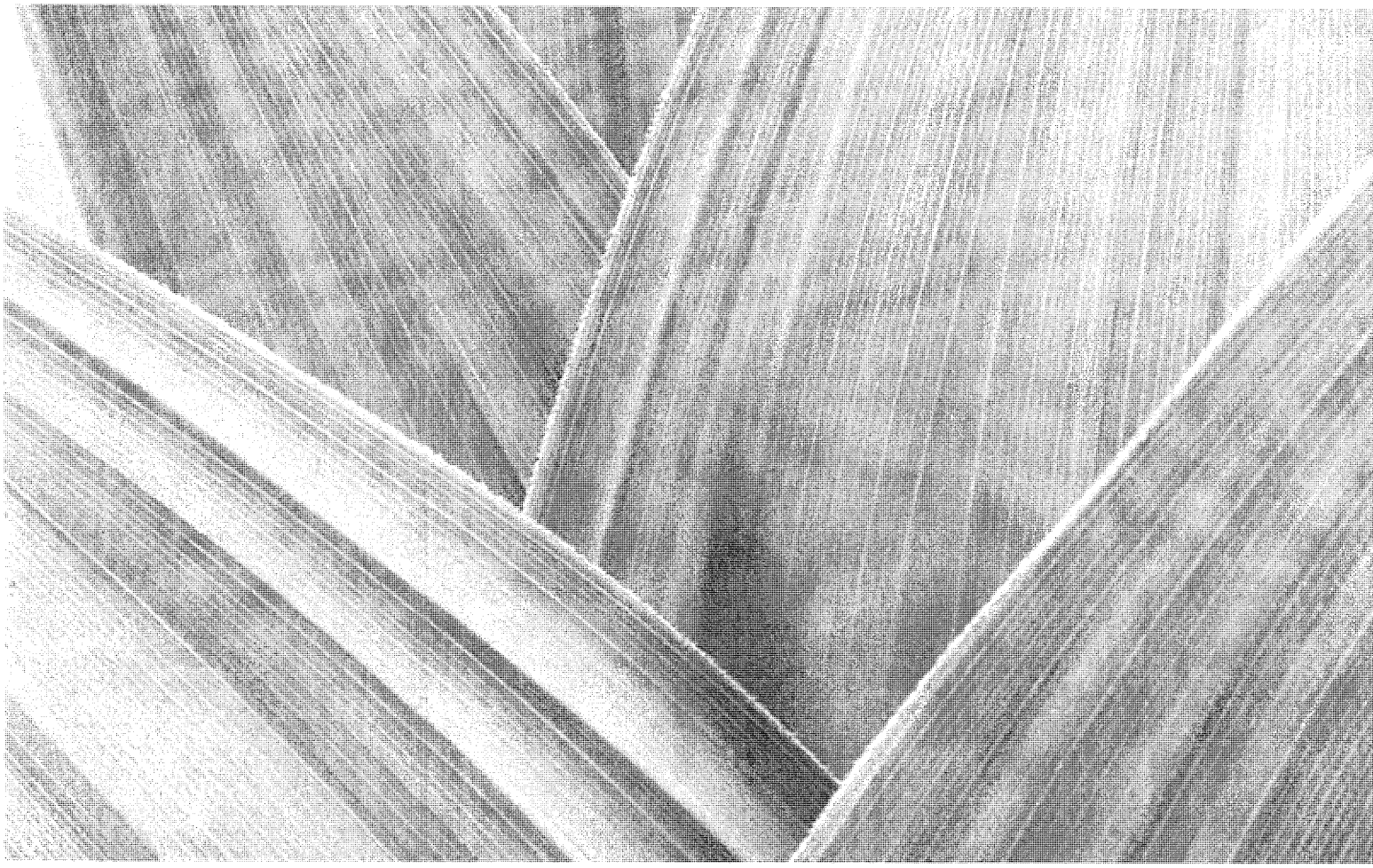
For the Press
News
Center
Executive
Bios
Photo
Library
RSS

For Investors
Stock
Information
Earnings
Releases
Company
History

For Suppliers
MyAccount
Payments
eConnections
FAQs
General
Conditions
of
Purchase
What
We Buy
To
Verify
an
Order is
Legitimate
Worldwide
Locations
&
Contacts
Sustainability
Expectations

For Potential Employees
Search
Jobs
Openings
Company
History
Corporate
Citizenship
Why Air
Products
Diversity
and
Inclusion

AIR PRODUCTS



2013 Sustainability Report

FY 2012 Performance

	Goal	2012 Performance
Greenhouse gases	Reduce 7% indexed against production by 2015 (from the 2007 baseline)	Reduced GHG emissions by another 3.5% to a total reduction of 14.6% on an intensity basis
Energy	Reduce consumption 7% indexed against production by 2015 for ASUs and HyCO, which represents about 80% of our total global energy requirements (from 2007 baseline)	Both HyCO and ASU energy efficiencies are now tracking ahead of the 2015 7% reduction goal, with efficiency improvements for HyCO and ASU at 4.8% and 5.4%, respectively
Water	Reduce consumption 10% on an intensity basis in the controllable portion of our usage (from 2009 baseline)	Water intensity has been reduced by 21% since 2009, exceeding the 2015 goal of 10% reduction in controllable, potable water consumption
Hazardous waste	Reduce U.S./Europe shipments 20% by end of 2011 (from 2005 baseline)	Hazardous waste declined 26% globally from 2011 to 2012
Toxic release inventory	Maintain at current low levels	Emissions declined 5% from 2011 to 2012
Distribution/fleet	Reduce NOx/particulate matter by 10% and CO_2 by 2% by 2015 (from 2009 baseline)	Particulate matter emissions declined 36% while NOx and CO_2 emissions remained consistent with prior year when the goal was met

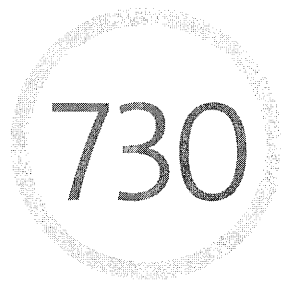
Air Products' Global Environmental and Global Operations teams collect and review environmental performance data annually.

2012 Energy Conservation and Efficiency

Every year, nearly 40 percent of our total operational spend goes toward powering production. In FY 2012, our energy consumption was down slightly from the previous year, despite increased production due to improved energy efficiency. Our total energy consumption, primarily consisting of natural gas and electric power, was equivalent to nearly 98 million MWh in 2012. The energy we consume is converted into products and services that help our customers improve their energy efficiency and reduce environmental impact, be it in the creation of cleaner-burning fuels or making water potable and available for more people to enjoy.

Improving our efficiency and conserving energy makes sense for the environment and our finances. If we remain on track to achieve our 2015 goal of reducing our energy consumption in our ASUs and HyCOs by 7 percent, it could be worth more than $100 million.

Fuel	MWh	GJ
Natural Gas (and Refinery off-gas)	77,976,637	280,715,893
Electricity	19,415,027	69,894,097
Coal	370	1,332
Pet-coke	368	1,324.8
Diesel Fuel	69,015	248,454
Gasoline	24,142	86,911.2
Jet Fuel	13,160	47,376
Biomass	353	1,270.8
Steam	284,513	1,024,246.8



heavy-duty trucks consumed nearly 8 million gallons of diesel fuel and traveled more than 54 million miles in the U.S.

At our corporate headquarters, we . . .

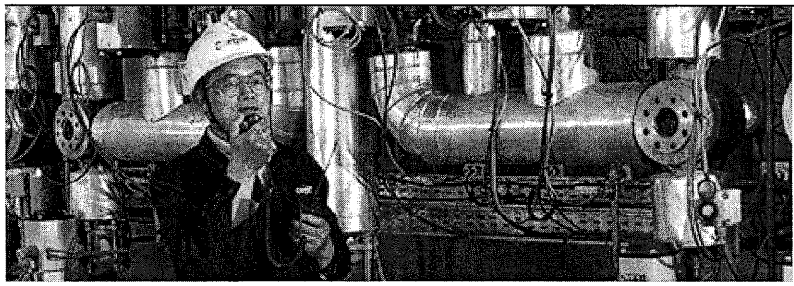
- **Recycled:**
  . . . 191 tons of scrap metal
  . . . 211 tons of office paper
  . . . 35 tons of wood pallets
  . . 30 tons of scrap wood
  . . . 57 tons of cardboard
  . . . 2.6 tons of fluorescent lamps
- **Achieved:**
  . . . a total recycling rate of 60%
- **Composted:**
  . . . over 6 tons of food waste, a 50% increase from the prior year
- **Reduced:**
  . . . energy consumption at our IT data centers by 24%
- **Generated 2MW of electricity from our solar farm:**
  . . . reducing CO_2 emissions by 2,000 tons, the emissions equivalent of taking 400 cars off the road for a year

Our Orange County, California, hydrogen fueling station generated 7,383 kilograms of hydrogen from the municipal wastewater treatment plant, generating 1.3 million kilowatt hours of electricity from this renewable source.

TAB 12

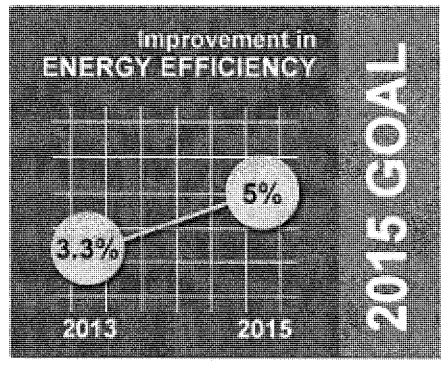
CARGILL

Cargill®



Improving energy efficiency

Over time, small steps result in significant change



Since 2000, Cargill has made progress toward improving energy efficiency in our operations. And our ongoing investment in our people, processes and technology solutions continues to pay off. As of 2013, we have improved our energy efficiency by 3.3 percent, and appear to be on track to meet our 2015 goal of a 5 percent improvement.

Behavior-based Energy Management (BBEM). Cargill is seeing great returns from its global behavior-based energy management (BBEM) system — a tool used to engage employees and integrate energy into daily actions to improve performance. It has led to the formation of several new efforts, including a robust leak tag initiative at our seven U.S. corn milling facilities which has resulted in the identification of water, compressed air and steam leaks and major energy cost savings. The BBEM program has helped Cargill identify numerous ways to save energy, including:

- Identifying and fixing leaky pipes
- Operating equipment only when needed to reduce lighting costs
- Changing air conditioning patterns to cool meat more efficiently
- Improving communications to enhance energy conservation

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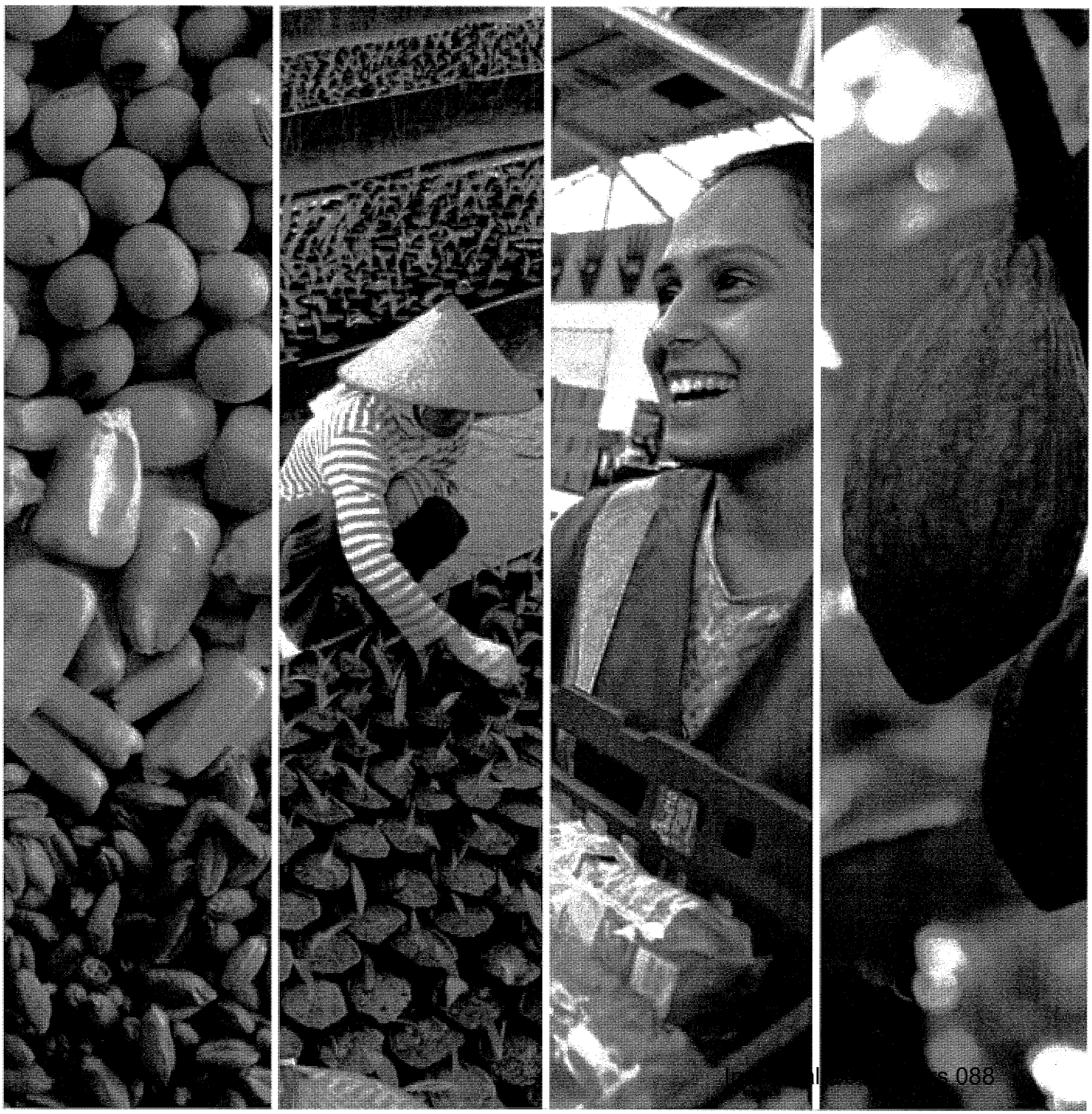
Cargill®

2013 Corporate
Responsibility Report

Responsibility across many dimensions



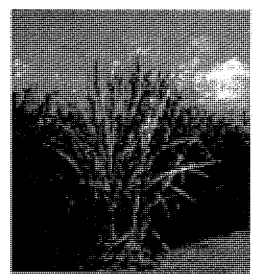
Sharing best practices in U.S. agriculture

In North America, Cargill is responding to customers' increasing interest in how commodity crops – including canola, corn, soy and wheat – are grown. When a major U.S. retailer asked for sustainability data from its suppliers, we reached out to grain elevator operators across the country to gather information about agricultural practices in our wheat supply chain. The resulting insights – such as the use of fertilizer and fuel; water use and irrigation; soil fertility and erosion; and integrated pest management – represent more than 9 million acres of U.S.-grown wheat. Our customers now have more insight into the environmental practices used in these regions so they are better prepared to answer questions from consumers. To help increase the sustainability of U.S. corn and wheat crops, we are partnering with industry groups – such as Field to Market: The Alliance for Sustainable Agriculture – and with TNC to increase farmers' use of Field to Market's Fieldprint Calculator, which helps track water, land and energy use, soil conservation and climate impact. Our AgHorizons business also works directly with farmers using NextField™ solutions to maximize yields while optimizing fertilizer use to reduce environmental impact.

Cargill is on target to source more than 100,000 metric tons of certified sustainable cocoa beans from Côte d'Ivoire by 2015 – making our program the largest of the kind in the country. We have trained more than 60,000 farmers since 2009, all of whom are now part of UTZ and Rainforest Alliance certified cooperatives. Our partnership with CARE also is improving social and economic development in 130 rural cocoa-producing districts in Côte d'Ivoire and Ghana.

Enhancing food safety

Cargill plays a leading role in helping advance food safety practices around the world. We strive to be a reliable source of expertise for our customers, maintain the trust of regulators, earn the confidence of consumers and be a catalyst to improve food safety across the industries in which we operate. In the United States, Cargill is working with government, industry partners and the public health community to introduce sweeping reforms to the U.S. food safety system. The U.S. Food Safety Modernization Act (FSMA), which focuses on foods regulated by the U.S. Food and Drug Administration (FDA), is the catalyst for these changes. FSMA aims to prevent food-borne illnesses by requiring all food companies and importers to take specific preventive actions like the kind that are the foundation of the food safety programs at Cargill and other industry leaders. Our work to develop innovative new technologies to identify and control food-borne pathogens continues, including an early predictive test for salmonella in turkeys, research into sources of salmonella in poultry and cattle, and tests to detect lower levels of mycotoxins. We are focusing on better crop production and animal husbandry practices that can help prevent or mitigate food safety risks.



Cargill has achieved Bonsucro™ certification for our sugar and ethanol supply chains in Brazil, demonstrating our commitment to using best manufacturing practices. As a founding member of Bonsucro, an organization focused on reducing the environmental and social impacts of sugarcane production, we also encourage our suppliers to follow the organization's criteria for sustainable sugarcane practices. Cargill has conducted training courses about the Bonsucro standard at six of our partner mills.

Reducing our environmental impact

We continually strive to find new and better ways to conserve resources, expand the use of renewable raw materials and reduce environmental impacts. At one of our largest beef processing plants, in Fort Morgan, Colorado, United States, we installed high efficiency fluorescent lighting and a more efficient boiler. Along with other energy-efficiency improvements, the facility has experienced a 10 percent reduction of natural gas use over the past three years, and an 8 percent increase in biogas recovery. Cargill is expanding use of clean energy systems, such as combined heat and power units that generate electric power and thermal energy from a single source. Cargill operates more than 30 of these combined energy systems globally, resulting in a 20 percent average improvement in energy efficiency compared to separate systems. We also work with customers to reduce the environmental impact of our supply chains. In China, we are reducing carbon emissions by using a pipeline to transport product from our corn processing facility to our customer's nearby location rather than delivering by truck.

Visit cargill.com for an expanded look at our corporate responsibility efforts.

Cargill®

2013 Annual Report

Results across many dimensions

Responsible operations, boundless innovation

Innovation brings new possibilities to the balancing of resource consumption and sustainability. By embedding more knowledge into our processes and products, we improve our own resource efficiency and help our customers achieve sustainable results.

Cargill and innovation partners, BASF and Novozymes, reached a milestone in their effort to produce acrylic acid from renewable raw materials. The joint teams produced a renewable building block, known as 3-HP, in pilot scale – an important step in the commercialization process. Today, acrylic acid is a product of crude oil refining, and it's used to make a variety of products such as the superabsorbent polymers found in baby diapers and hygiene products. A change to biobased acrylic acid could be a groundbreaking offering to the market.

High performing, environmentally appealing

CPFL Energia, Brazil's largest non-state-owned electric energy company, is switching to Cargill's Envirotemp™ FR3™ fluid as the coolant in its transformers. Our vegetable oil-based product, which replaces petroleum-derived mineral oil, is less flammable, nontoxic, biodegradable and nearly carbon neutral. And it's higher performing, with greater operating efficiency and reliability, less downtime and longer insulation life. Because CPFL's distribution network is substantial, the changeover will take some time, but more than 5,000 units are installed. For its leadership in sustainable innovation, CPFL received Brazil's prestigious FINEP Award.

Fueled by waste

Cargill's High River beef processing facility is the largest such plant in Canada. Handling 4,500 head of cattle a day presents environmental challenges, including the energy it takes to run the plant and the waste materials produced in the process. Cargill installed a waste-to-fuel system – the first of its kind in North America – that converts the organic waste into electrical power and steam. Combined with the plant's methane capture system, almost 80 percent of the facility's energy requirements will soon come from renewable sources. It will make High River the most environmentally friendly beef plant in the world.

Sweating the small stuff

Spot a leak in a steam pipe? Tag it for repair. Notice a trickling water hose? Turn it off. Freezer door ajar? Close it up. Equipment running "just in case?" Determine what's needed when. These are some of the small energy management steps that, over time, have reaped big returns for Cargill. Because it takes ongoing attention to sustain the savings, we created a behavior-based program that helps employees integrate energy management into their daily actions. Their watchfulness helps keep Cargill on track to meet our energy efficiency goals.

In fiscal 2013, Cargill made continued progress toward all four of its 2015 energy and resource efficiency goals.

Improvement in energy efficiency

2013 progress	3.3%
2015 goal	5.0%

Improvement in freshwater efficiency

2013 progress	4.1%
2015 goal	5.0%

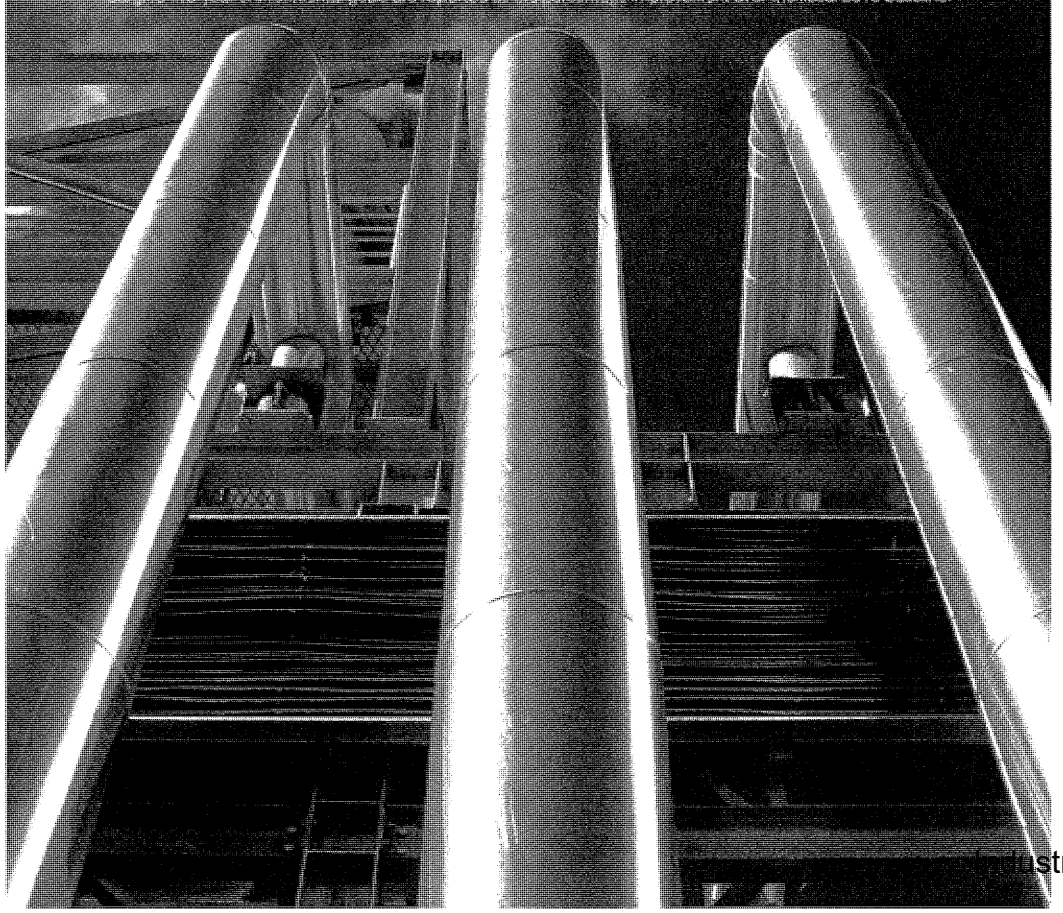
Renewables in our energy portfolio

2013 progress	14.2%
2015 goal	12.5%

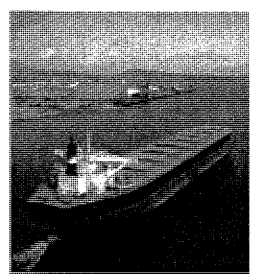
Improvement in greenhouse gas intensity

2013 progress	3.9%
2015 goal	5.0%

Cargill's five-year environmental goals are reported as the percentage improvement over the fiscal 2010 baseline.



For the third year, Cargill participated in the Carbon Disclosure Project, an independent organization through which companies self-report their greenhouse gas emissions, water usage and climate change-related strategies and processes. In addition to reporting the company's total emissions, our response highlights the sustainability actions and innovations we integrate into our operations, products and services. Cargill was one of the first in global agribusiness to participate in the CDP.



Cargill is one of the world's largest charterers of dry bulk freight. At any one time, we have more than 500 vessels underway, transporting 200 million metric tons of cargo a year. In 2012, we began factoring greenhouse gas emissions into our ship selection process. Utilizing indices developed by RightShip, a ship vetting specialist, we compare vessels' relative energy efficiency. Our pledge to charter only the more efficient vessels was a first in the shipping industry.

TAB 13

TOYOTA MOTOR MANUFACTURING INDIANA

TOYOTA (index.html)

NORTH AMERICAN ENVIRONMENTAL REPORT 2013

HOME (INDEX.HTML)

DEAR READERS (DEAR-READERS.HTML)

VISION AND ACTION (VISION-AND-ACTION.HTML)

VEHICLES (VEHICLES.HTML)

> HOME

Welcome to Toyota's 2013 North American Environmental Report. Here you will find

OPERATIONS (OPERATIONS.HTML)

BUSINESS PARTNERS (BUSINESS-PARTNERS.HTML)

COMMUNITIES (COMMUNITIES.HTML)

DATA CENTER (DATA-CENTER.HTML)

2013 AT A GLANCE (2013-AT-A-GLANCE.HTML)

information about our environmental activities in the United States, Canada and Mexico.

Information, data and stories cover all aspects of the vehicle life cycle - research and development, manufacturing, logistics and sales. We also describe our relationships with suppliers and dealerships, as well as how we support our communities through environmental stewardship and education initiatives.

This report covers the Toyota, Lexus and Scion brands in North America. The period covered in this report is fiscal year 2013 (April 1, 2012 through March 31, 2013) and product model year 2013. If data is presented with different dates, this is clearly indicated.

We listened to your comments and suggestions about last year's report and used them to improve this report. We would appreciate your feedback. You may participate in a survey found here (http://www.bisigimpact.com/toyota_NA2013_survey).

This report was published in November 2013.

CONTACT
Environmental Report Manager | 601 Lexington Ave, 49th Floor, New York, NY 10022

www.toyota.com (http://www.toyota.com) (USA) | www.toyota.ca (http://www.toyota.ca) (Canada) | www.toyota.com.mx (http://www.toyota.com.mx) (Mexico)

prescriptions as well as complete documentation of all programs. The Certification Review Committee, a panel of WHC wildlife biologists and staff, reviews the materials for certification eligibility and recognizes deserving projects under an appropriate category.

The Wildlife Habitat Council is a nonprofit group of corporations, conservation organizations and individuals dedicated to restoring and enhancing wildlife habitat. WHC works with corporations and other landowners to create tailored voluntary wildlife habitat enhancement and conservation education programs on corporate facilities and in the communities where they operate.

We are focusing on three common biodiversity themes for our North American manufacturing plants: native habitat restoration, native landscaping and pollinator protection. With our plants working toward a common goal of preserving and protecting the environment, our efforts will have the greatest impact.

CARBON

Toyota is concerned about the possible impacts of climate change and is committed globally to fostering a "low-carbon society." Energy use is our main source of greenhouse gas (GHG) emissions. We work hard to reduce our energy use at our facilities and in our logistics; we are also looking into renewable energy as a means of reducing our carbon footprint.

We measure our energy consumption and GHG emissions on a per vehicle basis. We strive for efficiency, because the more efficient we can be, the less we waste. Efficiency and waste reduction activities are highlighted throughout this report. In the following sections, we describe our efforts to use energy more efficiently, reduce GHG emissions and save money.

ENERGY CONSUMPTION

According to the Institute of Energy Research, 78 percent of the energy consumed in North America is generated from burning fossil fuels such as coal and natural gas. These resources are non-renewable, meaning they cannot be naturally replenished for consumption.

Mining, drilling and burning fossil fuels to generate power result in negative impacts to air, water and land. These impacts, combined with the rising cost of energy, make energy efficiency a high priority for companies in all industry sectors.

In North America, Toyota consumes over one billion kilowatt-hours of electricity each year. Much of this electricity is consumed by our 14 manufacturing plants. To manage both the environmental impacts of our energy consumption and the cost, we focus on energy efficiency first. By identifying *kaizen* opportunities, then using the concept of *yokoten* to transfer lessons learned from one facility to another, we are reducing inefficiencies and eliminating wasteful practices.

ENERGY STAR® AWARDS

The U.S. Environmental Protection Agency (EPA) presented Toyota Motor Engineering & Manufacturing North America, Inc. (TEMA) with its ninth consecutive **ENERGY STAR Partner of the Year** - Sustained Excellence Award for continued leadership in protecting the environment through superior energy management. Toyota's nine Sustained Excellence Awards are the most among any automaker assembling vehicles in the United States.

Since 2002, energy use has been reduced by 22 percent per vehicle produced, and the cumulative cost savings at Toyota's 14 North American vehicle, engine and parts plants have totaled more than $410 million. The total energy saved would power 30,000 average households for 10 years.

"The award gives us greater motivation to identify ways to minimize our impact on the environment while helping our bottom line," said Robin Haugen, General Manager of TEMA Production Engineering - Plant and Environmental Engineering. "Our team members' commitment to reducing energy consumption across our operations demonstrates that when good ideas are shared, great things can happen."

The U.S. Environmental Protection Agency (EPA) has presented Toyota Motor Engineering & Manufacturing North America, Inc. (TEMA) with its ninth consecutive ENERGY STAR Partner of the Year - Sustained Excellence Award for continued leadership in protecting the environment through superior energy management. Toyota's nine Sustained Excellence Awards are the most among any automaker assembling vehicles in the United States.

In addition to the Sustained Excellence award, several Toyota facilities were certified with the **Energy Star label**, including our plants in Indiana, Kentucky and Texas, our North American Parts Center warehouse in Kentucky, and two office complexes in California: Toyota Plaza and Gramercy Plaza. For a facility to earn an Energy Star label, it must perform in the top 25 percent based on the Energy Performance Indicator (EPI). The EPI was originally developed for assembly plants, defined as welding, painting and assembly operations in the same location, by the Auto Focus Group, of which Toyota was a founding member. The EPI for assembly plants normalizes energy consumption for vehicle size and location to show how efficiently a specific plant is performing. The Energy Star label may be awarded to manufacturing plants and commercial buildings.

The ENERGY STAR Challenge for Industry is designed to recognize individual industrial sites. Any manufacturing site whose company is an ENERGY STAR partner is eligible to enroll. Sites take the challenge by committing to improve their energy efficiency by 10 percent over five years. The following plants are currently taking the challenge:

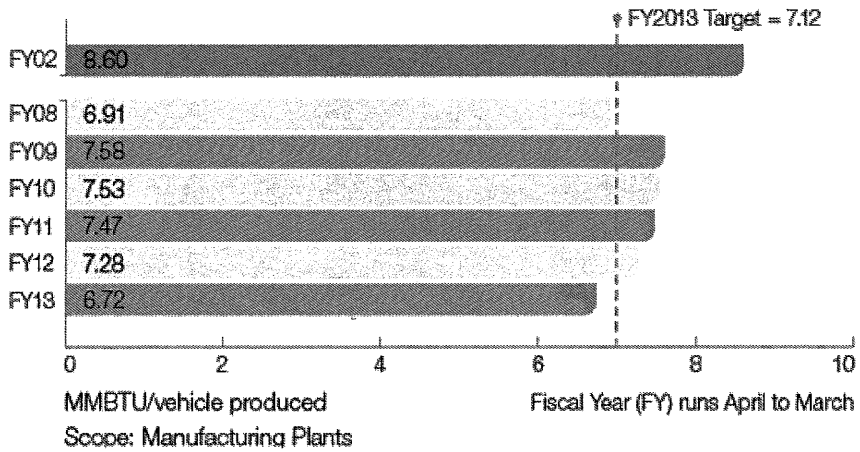
- Bodine Aluminum in Troy, Missouri
- Bodine Aluminum in St. Louis, Missouri
- Bodine Aluminum in Jackson, Tennessee
- Canadian Autoparts Toyota, Inc. in Delta, British Columbia
- Toyota Motor Manufacturing de Baja California in Mexico
- Toyota Motor Manufacturing, Alabama in Huntsville
- Toyota Motor Manufacturing Canada in Cambridge, Ontario
- Toyota Motor Manufacturing Canada in Woodstock, Ontario
- Toyota Motor Manufacturing, Indiana in Princeton
- Toyota Motor Manufacturing, Kentucky in Georgetown
- Toyota Motor Manufacturing, Texas in San Antonio
- Toyota Motor Manufacturing, West Virginia in Buffalo

TARGET & PERFORMANCE

2013 Target: Reduce energy consumption at manufacturing plants to 7.12 MMBtus per vehicle (achieved)

Toyota's North American manufacturing facilities had an annual target for fiscal year 2013 to improve energy intensity to 7.12 MMBtus per vehicle produced. We use MMBtus for this target as a way to combine several energy sources, including electricity and natural gas, into a single metric. We achieved this target and reached 6.72 MMBtus per vehicle, in part thanks to the identification of three major energy reduction opportunities in our paint shops: adiabatic humidification, oven air flow reduction, and pre-heating regenerative thermal oxidizer (RTO) combustion air. Combined, these reduction opportunities total almost 1.2 million MMBtus, equivalent to 349 million kilowatt-hours and almost 11 percent of total energy consumption from our manufacturing plants. We have already begun implementing these reduction opportunities at some of our plants, and plan to have them implemented in all North American assembly plants by the end of fiscal year 2015.

FG19 • Energy Consumption



Industrial Consumers 100

pressure water instead of steam.

Specific examples of kaizens completed over the last year include:

- **Bodine Aluminum (Troy, Missouri):** Replaced a 20-year old oxidizer (used to control emissions of volatile organic compounds) with a new, more energy-efficient oxidizer, improving energy efficiency by nearly 14 percent and saving $75,000 annually.
- **Toyota Motor Manufacturing Canada:** The Woodstock plant installed a cooling system using outside air to chill water during the cold season, reducing energy use by nearly two percent and saving more than $100,000 annually. The Cambridge plant installed linkage-less boiler burner controls, improving boiler efficiency by more than 15 percent and saving more than $112,000 annually.
- **Toyota Motor Manufacturing, Indiana:** Installed an adiabatic humidification system in the paint booth, improving energy efficiency by 35 percent and saving more than $1.1 million annually. The plant also reduced paint booth downdrafts by an average of 15 percent in all automatic zones, saving more than $600,000 annually with zero investment.
- **Toyota Motor Manufacturing, Kentucky:** Installed an adiabatic humidification system in the paint and plastics shops that cut steam consumption by more than 65 percent and total energy use by 12 percent, resulting in savings of more than $1.4 million annually.
- **Toyota Motor Manufacturing, Mississippi:** As Toyota's Model Sustainable Plant for the North American region, Mississippi has used innovative design and successful practices from other Toyota facilities to become the most energy-efficient Toyota plant in the region. For example, the paint shop utilizes a three-wet system that eliminates the need for a paint oven, saving over 6,000 MMBtus in energy annually.
- **Toyota Motor Manufacturing, Texas:** Installed modified burner controls on a Regenerative Thermal Oxidizer (RTO), improving energy efficiency by more than 16 percent and saving $25,000 annually. An RTO destroys VOC emissions from the paint shop.
- **Toyota Motor Manufacturing, West Virginia:** Installed a compressed air metering system to improve system control. This improvement cut energy use by four percent, resulting in savings of more than $300,000 annually.

In addition to energy reductions at our manufacturing facilities, we also continue to find reduction opportunities at our sales and distribution locations. In fiscal year 2013, we upgraded from metal halide to T-8 lamps at the Vancouver and Toronto parts distribution centers, and to T-5 lamps with motion and daylight sensors at the Los Angeles parts distribution center. The Los Angeles project was the final distribution center in the United States to complete a lighting upgrade.

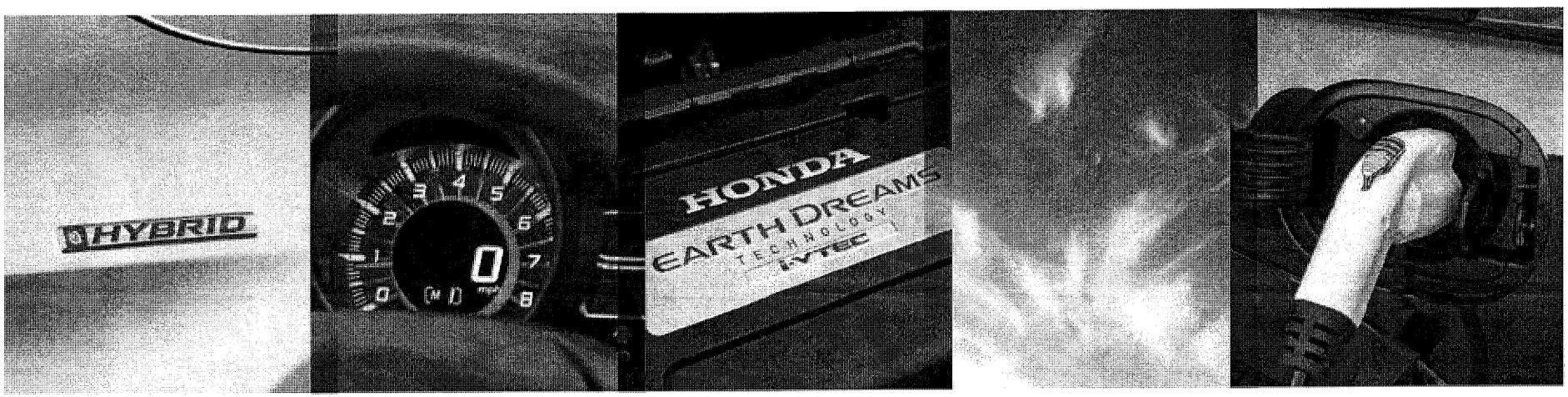
TAB 14

HONDA OF AMERICA

HONDA

Industrial Consumers 104

2013 North American Environmental Report



BLUE SKIES FOR
OUR CHILDREN

Life Cycle Assessment

Manufacturing

Overview

Honda operates 14 manufacturing facilities in North America, producing[1] automobiles, all-terrain vehicles (ATVs), and power equipment products such as lawn mowers, snow blowers, and small displacement general-purpose gasoline engines. In FY13, more than 90% of the vehicles sold in North America were produced in the region.

Focus

Our work to reduce the environmental impact of our manufacturing operations in North America includes efforts to reduce the energy intensity of production, as well as initiatives to use water and other natural resources more efficiently, and to reduce air emissions and waste generation.

Important note concerning this section: It is important for readers to understand the difference in scope of manufacturing data reported in the 2013 North America Environmental Report and the Honda Environmental Annual Report 2013 produced by Honda Motor Co. Ltd. in Japan. The Honda Environmental Annual Report 2013 reports data from all Honda Motor Co. Ltd. consolidated subsidiary and affiliated manufacturing operations in North America. The 2013 North America Environmental Report manufacturing data reports only data from the ten subsidiary operations in North America currently producing products. Two additional manufacturing subsidiaries, Honda Aircraft Company Inc. and Honda Aero Inc., are not currently included because they have had no commercial sales. The CO_2 emissions, energy use, waste generation, and water use data reported in the 2013 North America Environmental Report have been independently verified by Bureau Veritas.

[1] Using domestic and globally sourced parts

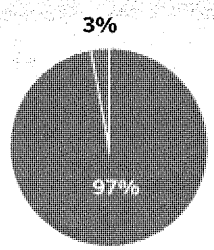
Energy Use

Electricity and natural gas represent approximately 95% of total energy consumption by Honda's North American manufacturing plants.

The energy intensity of production was significantly improved as a result of higher production volumes and more efficient utilization of plant production capacity.

Energy Consumption

ENERGY USE BY SOURCE



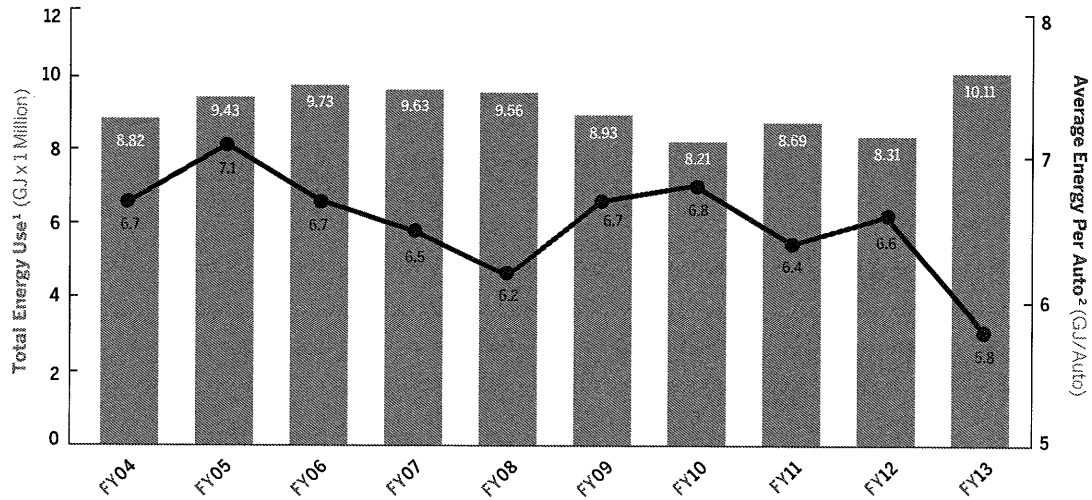
- **97%** Electricity and Natural Gas
- **3%** Other Fuels
  Propane, fuel oil, gasoline, coke, kerosene, and others

ENERGY USE IN MANUFACTURING (TOTAL AND PER AUTO)

FY13 RESULTS

Total Energy Use:
21.7% increase vs. previous year

Energy Use Per Auto:
12.1% decrease vs. previous year



[1] Total energy use (from consumption of electricity and natural gas) includes all North American manufacturing operations.

[2] Energy used per auto encompasses all auto-related manufacturing activity, including automobile engines and transmissions produced in North America; it does not include power equipment and powersports products.

Energy Reduction Efforts in FY13

Turning Cooking Oil into Biodiesel Fuel

Honda Manufacturing of Alabama, Inc., provides used cooking oil from its cafeterias to the Alabama Institute for the Deaf and Blind. This vendor produces biodiesel from the oil and provides it to Honda's Lincoln, Alabama plant at no cost. The plant then uses the biodiesel to operate a vehicle that transports waste and recyclables throughout the facility. Annual usage of biodiesel is expected to be approximately 6,500 gallons.

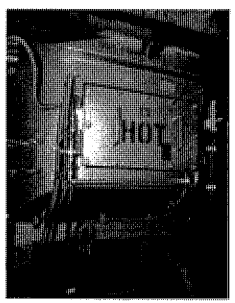
Fluidized-Bed Carbon Cleans the Air

As part of a FY13 expansion, Honda Manufacturing of Alabama, Inc. reduced energy use by installing a fluidized-bed carbon (FBC) system to destroy VOCs from the bumper coating process at its Lincoln, Alabama automobile plant. The new system reduces energy use by approximately 80% compared with the more widely used regenerative thermal oxidizer system. This results in an annual reduction of approximately 1,600 metric tons of CO_2 and 1.5 metric tons of NO_x.

Steam Has Left the Building

In an effort to provide heat and humidity in a more efficient and flexible manner, Honda's Marysville, Ohio auto plant, its oldest and largest plant in North America, completed a multi-year project to transition from a centralized steam system to localized natural gas and electric systems. The steam elimination at the plant will save $640,000 annually while reducing CO_2 emissions by 828 metric tons each year.

Dual-Chamber Furnace Saves Energy



The Anna, Ohio engine plant, Honda's largest engine plant worldwide, has completed installation of energy-efficient dual-chamber furnaces to replace single-crucible furnaces. The new furnaces allow for continuous filling of aluminum for die casting operations while the machine is running in automatic mode. This has reduced CO_2 emissions by 88.4 metric tons per year and yielded an $8,900 annual savings.

Next-Generation E-Coat

The use of next-generation paint material used at the Greensburg, Indiana auto plant and Marysville, Ohio auto plant (production line 1), which together comprise roughly 30% of Honda's automobile production capacity in North America, resulted in a reduction of E-coat material, electricity, and water use:

- E-Coat material use reduced 25%
- Electricity use reduced by 1.4 kWh per vehicle produced
- Water use reduced by 7.6 gallons per vehicle produced

Real-Time Monitoring Cuts Electricity Use

Real-time monitoring allows associates to see how much energy is being used at any time. This can help associates to identify equipment that can be turned off during breaks or between production shifts, and also help determine when production is not taking place on weekends. In addition, real-time monitoring helps associates understand how energy is being used, and be aware of which areas or processes use the most energy. The addition of this sophisticated system at the Marysville, Ohio auto plant in FY13 provides monitoring of electric use at *all* five Honda auto plants in the U.S. and Canada and also at two engine plants in the region.

Electricity from Wind Turbines

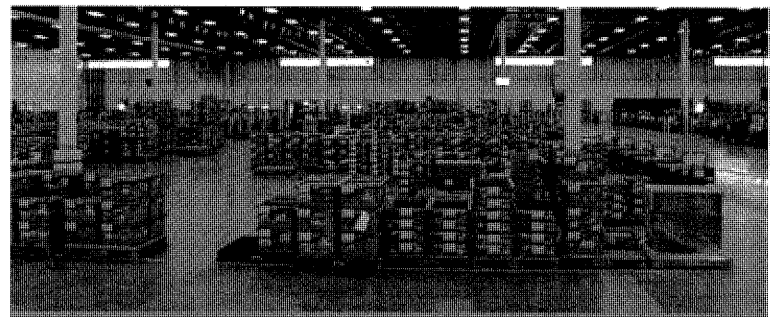
Honda Transmission Mfg. of America, Inc. announced in January 2013 that its Russells Point, Ohio plant will be the first automotive manufacturing facility in the U.S. to obtain a substantial amount of electricity from on-site turbines. The two utility-scale turbines are anticipated to supply approximately 10% of the plant's electricity, as well as reduce CO_2 emissions. Output of the combined turbines will vary, but is estimated at 10,000 megawatt hours per year. The turbines are expected to be in operation in late 2013.

Energy Reduction Efforts in FY13 cont'd

New On-Site Consolidation Centers

The newly implemented on-site parts consolidation centers at the East Liberty, Ohio auto plant (ELP) and Anna, Ohio engine plant (AEP) have resulted in a reduction of fuel usage and CO_2 emissions at these two plants.

- Shuttle truck fuel reduction: 483,000 gallons/year (ELP); 108,780 gallons/year (AEP)
- Shuttle truck CO_2 emissions reduction: 4,915 metric tons/year (ELP); 1,114 metric tons/year (AEP)



Consolidation centers like this one, at the East Liberty Auto Plant, are reducing truck miles, emissions and fuel consumption associated with the transfer of parts from suppliers to Honda plants in North America.

Waste Reduction Initiatives in FY13

Reduced Waste in Cafeterias

Honda's Anna, Ohio engine plant and its Marysville, Ohio auto plant completed conversion to washable dishware in cafeterias, greatly reducing the amount of paper and other materials transported to a waste-to-energy facility. Washable dishware has now been implemented at all four of the company's manufacturing facilities in Ohio.

Vermi Composting Decreases Landfill Waste

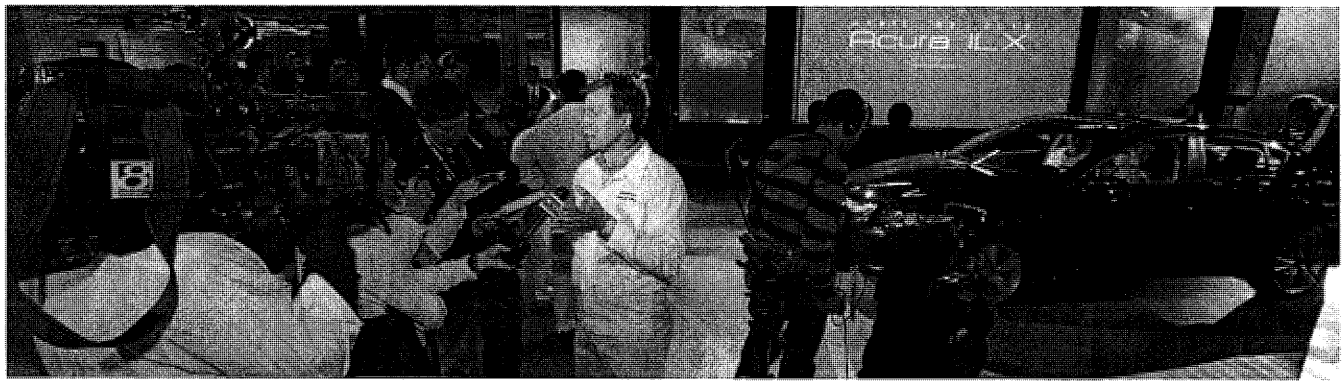
Honda de Mexico in FY13 entered into a partnership with an off-site vendor to begin a program for vermi (worm) composting of waste from cafeterias, associate break areas, and site-landscaping waste. The program has resulted in a 70% decrease in waste transported to landfills from Honda de Mexico. The vendor uses the composted material to grow organic produce.

New Life for Purge Solvent

Waste solvent used to purge painting equipment in the Marysville, Ohio auto plant's bumper painting operations is now sent to an off-site facility for redistillation. The redistilled solvent is returned to the plant to once again clean painting equipment. This material previously was sent to a cement kiln where it was used to clean equipment before being used as a fuel.

Recycling Instrument Panels at the Plant

Regrinding instrument panels at the East Liberty, Ohio auto plant allows for the recycling of nearly 300,000 pounds of material that is used to produce new instrument panels. By reprocessing this material on site, the plant has eliminated the shipping of 39 trailer loads of material to an off-site recycling facility each year.



search...

Press Release
Fact Sheet
Photo Gallery

Honda Manufacturing of Indiana Earns EPA's ENERGY STAR(R) Certification for Superior Energy Efficiency

Contact Info: For media inquiries, please contact **HMIN_cc@hmin.honda.com** or **812.222.6000 ext. 75278.**

Honda Greensburg Plant and plants in Ohio perform in top 25 percent

GREENSBURG, Indiana, Jan. 8, 2013 – Honda Manufacturing of Indiana (HMIN) earned the U.S. Environmental Protection Agency's (EPA's) ENERGY STAR certification for the first time.

ENERGY STAR certification signifies that HMIN performs in the top 25 percent of similar facilities nationwide for energy efficiency. The EPA bases the award on the amount of energy needed to produce an automobile, taking into account factors such as vehicle size and production volume.

Upon starting auto production in 2008, HMIN incorporated the latest technologies to achieve energy-efficient operations. With the start of two full shifts in late 2011, energy characteristics designed into the plant allowed it to achieve top energy performance.

HMIN's energy efficient technology includes paint booth designs that minimize the volume of temperature-controlled air, as well as systems to facilitate heat recovery and to recycle exhaust air. The Greensburg plant also incorporated a building management system to optimize the control of heating, cooling and lighting needs.

"We are proud of our young team at the Greensburg plant," said Bob Nelson, HMIN's senior vice president. "Being an energy efficient company is important to us and we place a big focus on our efforts to reduce any environmental impact."

Honda automobile assembly plants in Ohio have earned the same designation for the sixth year. Honda of America Mfg.'s auto assembly plants in Marysville and East Liberty, Ohio have ongoing initiatives to reduce energy consumption. Major areas include installation of energy-efficient equipment, implementing new technologies in auto-body painting systems and lighting efficiency improvements.

ENERGY STAR was introduced by EPA in 1992 as a voluntary, market-based partnership to reduce greenhouse gas emissions through energy efficiency.

"Improving the energy efficiency of our nation's industrial facilities is critical to protecting our environment, " said Jean Lupinacci, Chief of the ENERGY STAR Commercial & Industrial Branch. "From the plant floor to the board room, organizations are leading the way by making their facilities more efficient and earning EPA's ENERGY STAR certification."

ENERGY STAR

Press Login

For additional photos and other media resources, please email the Corporate Communications office at **hmin_cc@hmin.honda.com** to receive login name and password.

Username

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Remember Me

Login

Today, the ENERGY STAR label can be found on more than 60 different kinds of products as well as new homes and commercial and industrial buildings that meet strict energy-efficiency specifications set by the EPA.

Over the past twenty years, American families and businesses have saved a total of nearly $230 billion on utility bills and prevented more than 1.7 billion metric tons of greenhouse gas emissions with help from ENERGY STAR.

For more information about ENERGY STAR Certification for Industrial Facilities: www.energystar.gov/labeledbuildings

Honda Environmental Leadership
Honda is a leader in the development of leading-edge technologies to improve fuel efficiency and reduce CO_2 emissions.

In 2006, Honda became the first automaker to announce voluntary CO_2 emissions reduction targets for its global fleet of automobile, power sports and power equipment products and its global network of manufacturing plants. In 2011, the company set a new CO_2 emission reduction targets for 2020, including a 30% reduction in CO_2 emissions from its products compared with 2000 levels.

The company leads all automakers with twelve LEED-Certified "Green Buildings" in North America, and last year announced that ten of its 14 North American manufacturing facilities are zero-waste to landfill.

###

Honda media contacts:

Anita Sipes, Honda Mfg. of Indiana
(812) 560-8535, anita_sipes@hmin.honda.com

Ron Lietzke, Honda of America, Mfg.
(937) 644-6627, ron_lietzke@ham.honda.com

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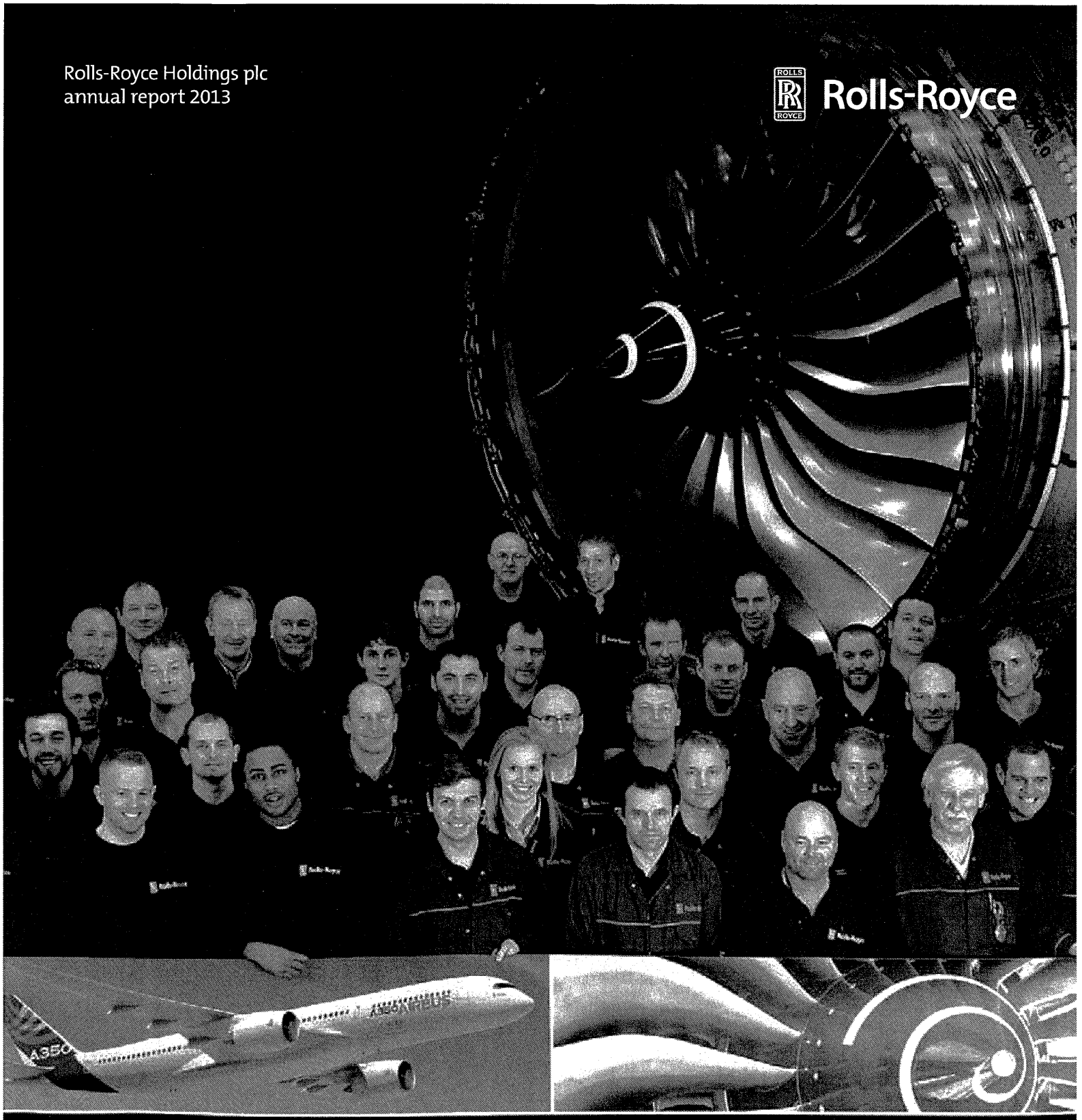
TAB 15

ROLLS-ROYCE CORPORATION

Rolls-Royce Holdings plc
annual report 2013

Rolls-Royce



Trent XWB - First flight test engine

ready for the Airbus A350 XWB

SUSTAINABILITY

Our strategy is to create a sustainable business, through our focus on customer, innovation and profitable growth. Our commitment is to continually improve the environmental performance of our products and services. With our customer at its heart, our strategy will deliver 'Better power, a Better future and a Better business'.

Sustainability

Better power
Helping our customers do more using less.

Better future
We are committed to innovation: powering better, cleaner, economic growth that creates value for customers, employees, investors, suppliers and wider society.

Better business
We invest in technology, people and ideas to improve all aspects of our performance and to drive profitable growth. Building on today's achievements to meet the business challenges of the future.

Better power

Helping our customers do more using less.

Each of our customer-facing segments provides services and customer operation solutions to improve the effectiveness of our equipment. In each of our markets, we are focused on reducing fuel consumption and emission levels. Find out more by visiting www.rolls-royce.com.

Improving the environmental performance of our products
Rolls-Royce has a strong track record of reducing emissions through significant investment in technology. In 2013, we invested £1,118 million in R&D, of which around two-thirds is aimed at reducing the environmental impact of our products and services.

In Civil aerospace, The Advisory Council for Aviation Research and Innovation in Europe (ACARE) has set challenging goals for aviation to meet by 2050. These include reducing aircraft CO_2 emissions by 75 per cent (per passenger kilometre); reducing noise by 65 per cent; and reducing oxides of nitrogen (NO_x) by 90 per cent, all relative to a typical new aircraft produced in 2000.

The Trent XWB is the world's most efficient turbofan aero engine flying today. The low noise technology built into the Trent 1000 makes it the quietest engine on the Boeing 787 Dreamliner, which itself has half the noise level of the corresponding previous generation aircraft.

In Defence aerospace, we have worked with the US Air Force to complete the final testing of the Series 3.5 enhancement of the T56 engine, providing fuel savings of up to ten per cent in addition to improved performance and reliability.

In Marine, our Environship design together with our advanced propulsion systems can reduce CO_2 emissions by up to 40 per cent compared to conventional diesel-powered vessels. The Environship concept was awarded the Green Ship Technology Award this year.

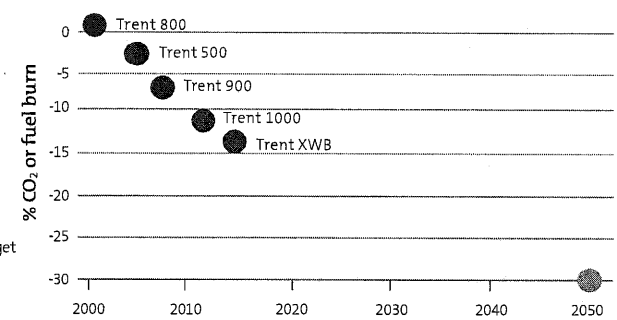
Our Civil Nuclear portfolio makes a significant contribution to future low carbon electricity generation. We are strongly positioned to support growth in this industry.

CO_2 (Engine)

ACARE Target:
75% overall reduction in CO_2 per passenger kilometre 30% engine contribution (Rolls-Royce engine long-term goals).

Trent family

ACARE flightpath 2050 target



CDP
DRIVING SUSTAINABLE ECONOMIES

Carbon Disclosure Project
The Rolls-Royce 2013 carbon disclosure score of 85 is our highest score to date. This, along with our performance band 'B' rating, demonstrates our commitment to continually improving our environmental performance.

MEMBER OF
Dow Jones
Sustainability Indices
In Collaboration with RobecoSAM

Dow Jones Sustainability Index
Rolls-Royce has been listed for the 12th consecutive year. We achieved an overall score of 67 in 2013, above average in all areas within the aviation and defence sector.

Left to right: Sarah Armstrong (Rolls-Royce), Ella Jakubowska and Sir Trevor McDonald at the TARGETjobs Female Undergraduate of the Year 2013 awards.

Better future

We are committed to innovation: powering better, cleaner economic growth that creates value for customers, employees, investors, suppliers and wider society.

Our people

Our culture fosters innovation, collaboration and continuous improvement. Developing strong people management and leadership skills alongside our technical expertise helps ensure that our employees are engaged and understand the wider role they play in the Group's success. We work actively to attract young people to Science, Technology, Engineering and Mathematics (STEM) subjects.

Content and figures do not include Rolls-Royce Power Systems AG, unless indicated.

In 2013, we recruited 2,530 experienced professionals to support the growth of our business. Our graduate programme is expanding, we recruited 379 graduates through our global programmes, an increase of 21 per cent from 2012. Our graduate population is becoming more representative of the diverse and global company we are working in, with this year's graduates representing 32 nationalities and coming from 97 universities. Our apprenticeship programme has been running for over 100 years. At any one time we have over 1,000 apprentices around the world.

Average number of employees	2012	2013*
By region		
United Kingdom	22,800	**24,800**
Rest of the world	20,000	**30,400**
Total	42,800	**55,200**
By sector		
Civil aerospace	21,500	**23,400**
Defence aerospace	7,800	**7,900**
Marine	8,800	**9,200**
Energy	3,700	**4,000**
Power Systems	1,000	**10,700**
Total	42,800	**55,200**

* Includes Rolls-Royce Power Systems AG.

We retained our title as 'The most popular graduate recruiter – Engineering, Designs and Manufacture' in the UK TARGETjobs Awards for the fourth year running. Our position has also risen in the 'Times Top 100 Graduate Employers' rankings and in the 'Guardian UK 300' survey.

Employee involvement

Employee engagement is critical to our success. We use a variety of channels to communicate with our employees. We have well-established frameworks for managing employee and trade union/employee representative participation which include formal information and consultation arrangements. Our incentive schemes and all-employee share plans make sure that every employee has the opportunity to share in our success. We encourage our employees to improve their knowledge and enhance their careers by providing meaningful training and development. In 2013, we supported 49,600 employees, customers and suppliers through our learning management system. Learning investment for 2013 was £39.7 million and a total of 272,000 training course completions were delivered during the year.

Human rights

Our human rights policy sets out our commitment to respect the human rights of our employees through core labour standards regarding employee involvement, diversity and equality, pay and benefits, working hours, forced labour and child labour. We set equivalent standards for our supply chain through our Supplier Code of Conduct.

Diversity and inclusion

A diverse workforce will help ensure our continued success as a global business and contribute towards a better future. We continue to face challenges in increasing diversity across the organisation and are working with our leadership teams to raise awareness of the need for change. Over recent years we have seen increased levels of diversity in both our early career pipeline and high potential pool, with females making up 26 per cent of our UK graduate intake in 2013 and 29 per cent of our graduate intake into countries outside the UK. Females are 24 per cent of our high potential population as compared to 15 per cent of our general population.

This year, Rolls-Royce sponsored the UK Female Undergraduate of the Year 2013 awards. The winner, Ella Jakubowska, accepted a place on our Customer Management Graduate Programme.

Headcount by gender*	Full-time equivalents at 31 December 2013
Male	46,975
Female	8,225
Total	**55,200**

* Includes Rolls-Royce Power Systems AG.

Senior managers by gender*	
Male	188
Female	11

* Includes Rolls-Royce Power Systems AG.

Board directors by gender	
Male	10
Female	2

We give full and fair consideration to applications for employment made by disabled people and also support employees who become disabled during employment, helping them make the best use of their skills and potential.

SUSTAINABILITY

Community investment
We are committed to conducting business to the highest standards and building positive relationships within the communities where we operate. In 2013, our total contribution was £8 million. We actively work with schools and universities to increase interest and encourage diversity amongst those taking STEM subjects, and to broaden the career aspirations of individuals from under-represented groups.

Working with governments
National governments are often our customers and we aim to build strategic relationships with governments in our key markets.

National governments and the EU also set the legislative and policy framework for doing business and they are a potential source of funding and support for research and technology (R&T), R&D, manufacturing, education and training initiatives, as well as for certain capital projects.

We engage in dialogue to align our own business needs with the political, social, economic, industrial and commercial requirements of national governments and the EU.

In 2013, we have worked with the UK Government on the development and implementation of the Aerospace Growth Partnership; in EU Affairs, we have focused on the Horizon 2020 EU funding programme; and in North America we focused on defence appropriations and policy issues.

Globally, we are members of national industry bodies and trade associations that represent our sector and Group interests. In the UK we are members of the Confederation of British Industry (CBI) and AeroSpace, Defence and Security (ADS); in North America the Aerospace Industries Association, Organisation for International Investment and the US Chamber of Commerce; in Brussels on EU affairs we belong to The AeroSpace and Defence Industries Association of Europe (ASD) and EU Turbines, amongst others; and globally we are members of local Chambers of Commerce in our countries of operation.

Rolls-Royce does not make corporate contributions or donations to political parties or to any organisations, think-tanks, academic institutions or charities closely associated to a political party or cause, as outlined in our Global Code of Conduct.

Better business

We invest in technology, people and ideas to improve all aspects of our performance and to drive profitable growth. Building on today's achievements to meet the business challenges of the future.

Ethics
We have made a strong commitment to improving our ethical performance in line with building a better business.

You will have read in the Chief Executive's review on pages 6 and 7, about Lord Gold's review, the SFO investigation, and the publication of our new Global Code of Conduct. We have also introduced a confidential Ethics Line which is available 24 hours a day, where individuals can ask questions or raise concerns. You can read more on these topics in the ethics committee report on pages 49 and 50. We are also refreshing our Supplier Code of Conduct for deployment in 2014. Compliance with the code will continue to be monitored through our regular supplier audits.

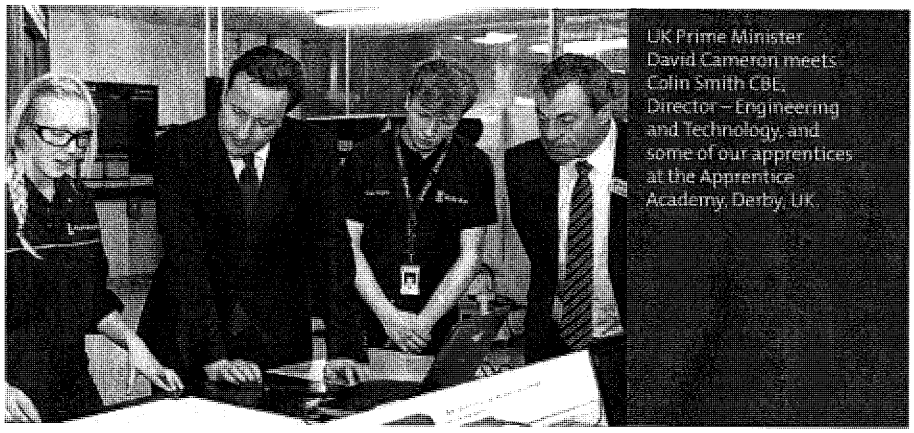
The Group continues to be an active participant in ethical initiatives of the European and US aerospace and defence business sectors. We are a signatory to the 'Common Industry Standards' which were drawn up by ASD and aim to promote and enhance integrity practices among its members.

The Group is also a member of the International Forum on Business Ethical Conduct's (IFBEC) Steering Committee. This organisation includes leading US and European companies in the aerospace and defence sectors and aims to promote responsible and ethical business behaviours through the Global Principles of Business Ethics.

Improving operational performance
Improving the environmental performance of our operations contributes to profitable growth. We have set a three-year target to reduce energy consumption by ten per cent by the end of 2015, with 2012 as the baseline year excluding product test and development and normalised by revenue.

Our energy use increased slightly in 2013, reflecting our increased levels of activity, but we are on track to reduce our overall emissions of greenhouse gases. We continue to invest in improvements to our facilities. Our total spend in 2013 amounted to almost £3 million on projects, including upgrades to compressed air systems, lighting systems and controls, and additional energy monitoring capability in our plants and offices. We are seeking to make wider use of more sustainable energy sources, where cost effective and practical to do so.

Our business segments have third-party accredited certification to the environmental management systems standard ISO 14001. In addition, we have maintained our focus on requiring key suppliers to become certified to ISO 14001. For further information on how we work with suppliers please visit www.rolls-royce.com/sustainability.



UK Prime Minister David Cameron meets Colin Smith CBE, Director – Engineering and Technology, and some of our apprentices at the Apprentice Academy, Derby, UK.

We are helping to lead the way on REACH (Registration, Evaluation and Authorisation of Chemicals) regulations and have submitted the first ever REACH Authorisation application. This is in the final stages of the approval process with the European Chemicals Agency and European Commission. Additionally, we continue to work with our suppliers to assist them in meeting their own obligations with a focus on the managed reduction and phase out of the use of targeted substances that are hazardous to health and dangerous to the environment.

Through our active participation in the International Aerospace Environment Group we are also helping to introduce new standards to facilitate efficient data sharing across the aerospace supply chain. This focuses on the uses of hazardous substances (in both manufacturing processes and included in our products) and related substitution and phase out programmes.

Greenhouse gas emissions

In 2013, our total greenhouse gas (GHG) emissions from our facilities, processes, product test and development was 520 kilotonnes carbon dioxide equivalent ($ktCO_2e$). This represents a reduction of nine per cent compared with 572 $ktCO_2e$ in 2009 (see table). This reduction has been achieved, despite a growth in our global facilities footprint. We have introduced a longer term GHG target over ten years, aimed at reducing emissions by 17 per cent by the end of 2022 (baselined at 2012), excluding product test and development.

The figures in the table do not include emissions associated with Rolls-Royce Power Systems AG. We expect to integrate this subsidiary into our reporting process during 2014. Power generation relates to the operation of commercial gas-fired power stations.

Total GHG emissions ($ktCO_2e$)	2009	2010	2011	2012	2013
Direct emissions – facilities, processes, product test and development (Scope 1)	215	236	229	213	**218**
Indirect emissions – facilities, processes, product test and development (Scope 2)	357	365	346	337	**302**
Total for facilities, processes, product test and development	572	601	575	550	**520**
Direct emissions – power generation to grid (Scope 1)					**56**
Indirect emissions – power generation to grid (Scope 2)					**3**
Total for facilities, processes, product test and development, and power generation to grid					**579**
Normalised (by revenue) emissions ratio for facilities, processes, product test and development ($ktCO_2e$/£m)					**0.04**

We have used the GHG Protocol Corporate Accounting and Reporting Standard (revised edition) data gathered to fulfil our requirements under the Carbon Reduction Commitment (CRC) Energy Efficiency scheme, and the UK Government's GHG reporting guidance as the basis of our methodology and source of emissions factors for Company reporting for 2013. Further details on our methodology can be found within our 'Basis of Reporting', available at www.rolls-royce.com/sustainability.

Safety

We are committed to continually improving the standards of health and safety in the workplace. We have steadily improved performance over previous years. In 2013, there were no fatalities or significant injuries and we achieved a 17 per cent reduction in the Total Reportable Injury (TRI) rate from 0.54 in 2012 to 0.45 TRIs per 100 employees. Over the longer term, we have reduced the TRI rate by 37 per cent since 2009. We have set a new target to reduce TRIs per 100 employees by 15 per cent by 2015 (baselined at 2012).

We continue to analyse high-potential incidents and each of them is investigated at business segment level, with some also included in Group level assessment. The number of high-potential incidents has declined slightly from previous years and the number of 'near misses' reported has significantly increased. The increased level of near miss reporting reflects greater risk awareness, overall proactive reporting, risk based investigation and other improvements. These contribute to both TRI and high potential incident reductions.

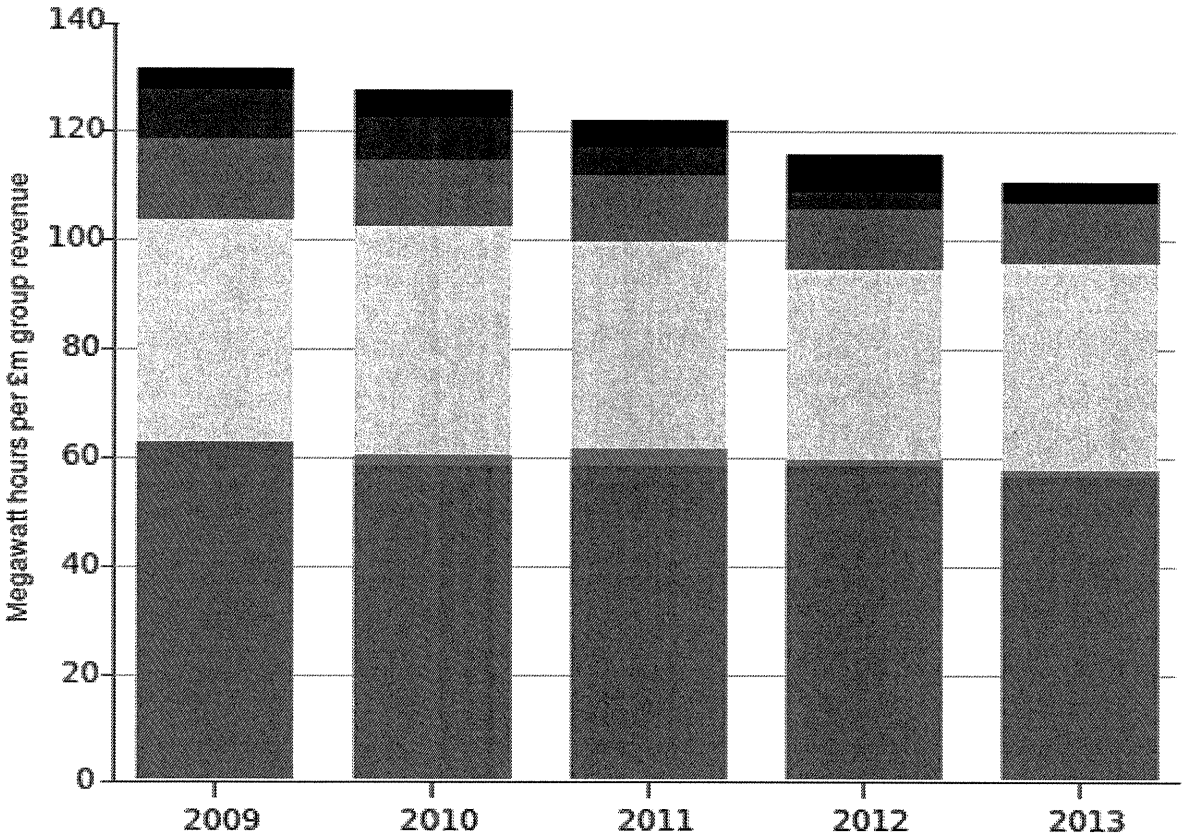
Throughout the year, we continued several global safety improvement plans. The Electrical and Process Safety programmes included site reviews and training and tools for ensuring efficient implementation of control measures. Reviews have also been carried out on the use and control of exposure to a number of chemicals newly-regulated under the REACH regulations. These reviews confirmed that our controls are suitable and that they ensure occupational exposures and releases to the environment are within limits set by the new requirements.

Health

The current incidence of occupational illness stands at 0.86 cases per 1,000 employees. The leading causes of illness are noise-induced hearing loss, work-related upper limb disorders and stress. This reflects our global health risk profile and provides the focus for our health improvement activities.

Following a prosecution in the UK by the Health and Safety Executive for one case of Hand-Arm Vibration Syndrome (HAVS), independent advice was sought from the UK Health and Safety Laboratory and we are continuing to strengthen our management of HAVS.

Energy use – facility support (normalised)



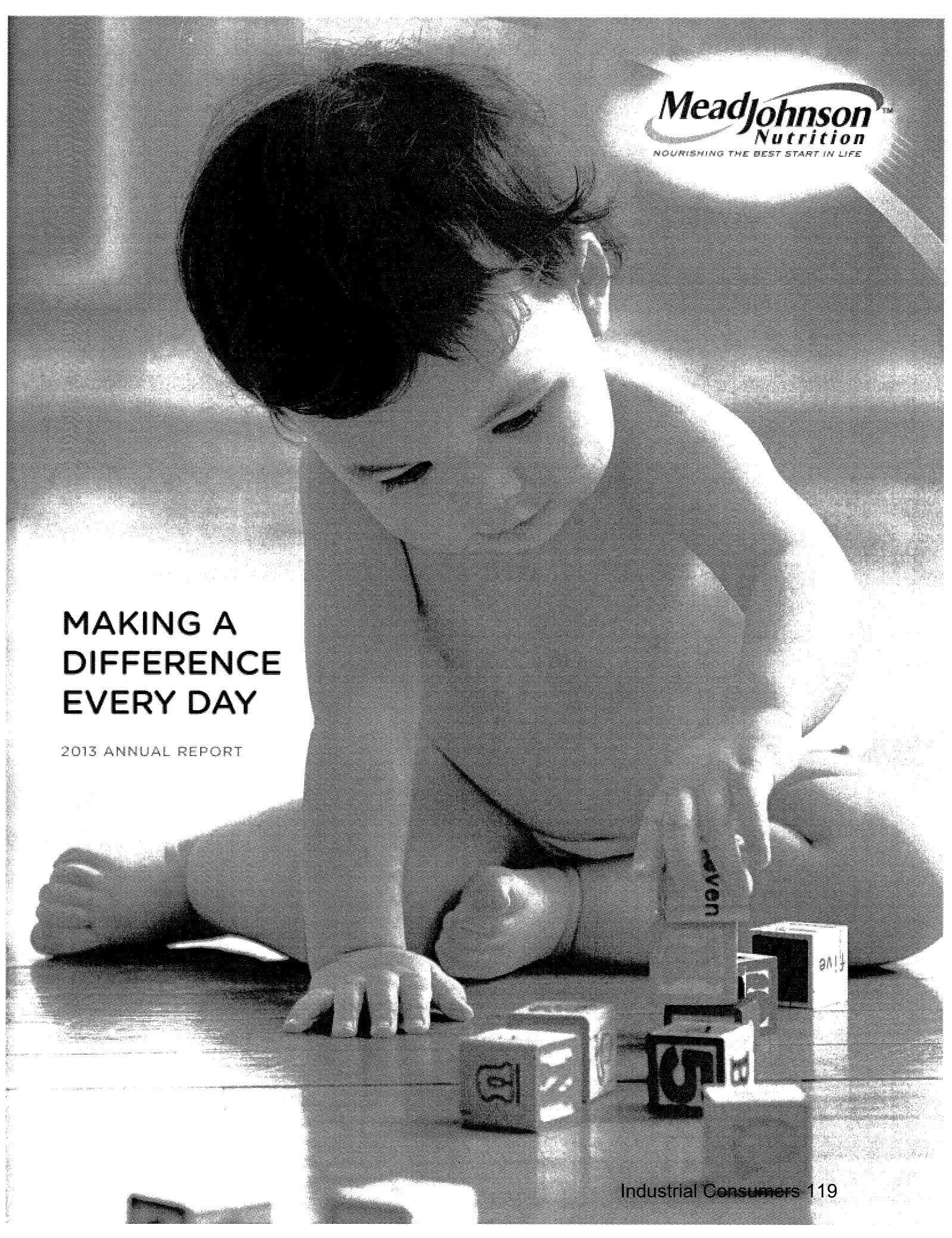
Key

Megawatt hours per £m group revenue

- Grid electricity
- CHP electricity
- On-site generated electricity
- Natural gas
- Landfill gas
- LPG
- Heavy fuel oil
- Light fuel oil / diesel
- Solid fuel

TAB 16

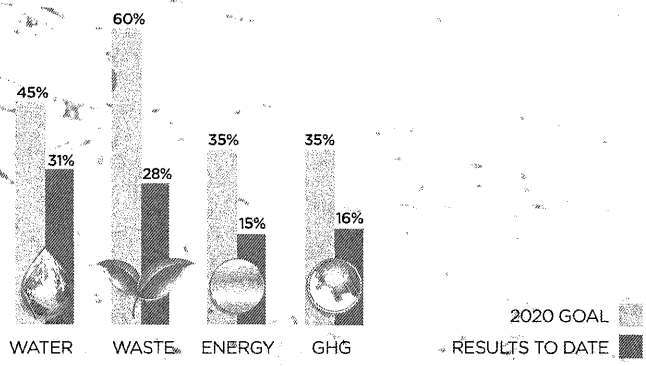
MEAD JOHNSON & COMPANY, LLC


Mead Johnson Nutrition
NOURISHING THE BEST START IN LIFE
MAKING A DIFFERENCE EVERY DAY
2013 ANNUAL REPORT

For 109 years, our company has been known for going the extra mile. A half century ago, Daniel Mead Johnson exhorted the team to "look to the needs and demands of tomorrow for today's standards of performance, and not to the tradition of yesterday." It is in that same spirit that we strive to go beyond what is required and push for incremental improvements in our sustainability efforts year after year—to help protect the environment for future generations.

In 2009, we launched Mead Johnson GreenVision 2020, our long-term initiative to reduce the company's environmental impact in the communities in which we operate. Four years later, the results of these efforts are exceeding expectations. Through a combination of programs—offsetting the use of fossil fuels by establishing bio methane programs; implementing water reduction projects; expanding recycling initiatives; and making changes in packaging—Mead Johnson surpassed every one of its annual GreenVision 2020 targets in 2013, and remains on pace to meet or exceed the long-term goals we set for the end of this decade.

GREENVISION 2020 GOALS AND RESULTS



100% COMMITMENT, 0% WASTE

Achieving zero waste is challenging even on a household level, so doing so at a major manufacturing facility is a tremendous accomplishment. In 2013, our production plant in the Netherlands became the second in our system (following China) to achieve the goal of sending absolutely no waste to landfills. It took a concerted year-long effort, including redesigned operations, increased recycling, and a number of sustainability partnerships with suppliers.

RESPONSIBILITY BEGINS AT HOME

This past year saw the continuation of Mead Johnson's exceptional safety performance record. A Total Recordable Incident Rate of one injury per 200,000 work hours is considered world class, and our 2013 rate declined to less than 0.5—a better than 40 percent improvement since 2011. If that rate were applied to just a single employee, it would be the equivalent of an injury occurring approximately every 200 years!

ETHICAL AND SUSTAINABLE SOURCING

Throughout its history, Mead Johnson has used only the highest quality ingredients in all our infant and toddler products, sourced from the most reputable vendors. In 2013, we reinforced our commitment to improving working conditions and environmental practices in conjunction with all the ingredients and materials we source around the world. We updated and further strengthened our Code of Business Conduct for Suppliers, which holds all of our suppliers to rigorous standards on everything from labor and human rights to workplace health and safety to environmental compliance.

We also continued to make progress on our Ethical Trade Initiative, with a current focus on cocoa. We have already achieved full traceability for the sourcing of cocoa across Latin America and are on track to do so for Africa by the end of 2014. We are now taking a similar approach with palm oil. As an initial step, we have required that all suppliers of palm oil used in our products be members of the Roundtable for Sustainable Palm Oil. We are adding palm oil sourcing as a focus area in 2014 and plan to enhance the certified level of sustainability and traceability of this ingredient over the next three years.

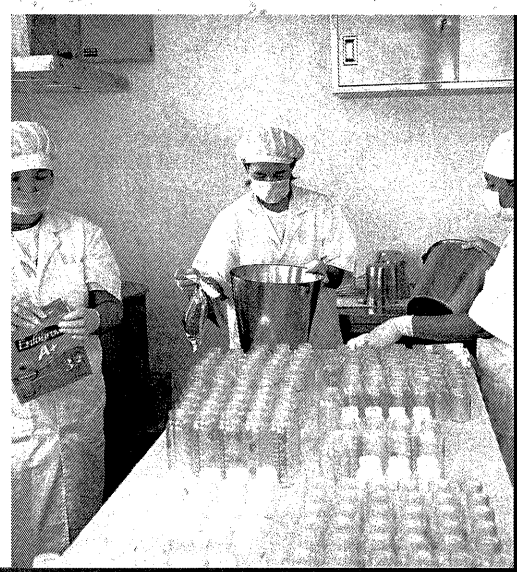
MARKETPLACE RECOGNITION

Mead Johnson's environmental stewardship and responsible corporate citizenry has been recognized in communities around the world. In 2013, Mead Johnson Mexico received the Socially Responsible Corporate Distinction Award from the Mexican Center for Philanthropy and Alliance for Corporate Social Responsibility for the second year in a row. Judging was based on a combination of excellence in ethics, corporate quality of life, community engagement and development, and environmental responsibility. And for the third time, Mead Johnson Thailand was honored with the Outstanding Safety, Occupational Health and Environment Award for its commitment to employee safety and environmental performance.

A TRUSTED REPUTATION

In Vietnam, MJN has long been known for its CSR initiatives, such as our financial, product and volunteer support of orphanages caring for children living with HIV/AIDS.

In 2013, however, the company received a different kind of recognition—this time for its marketplace activities. Mead Johnson Vietnam became the first foreign-owned company to receive the Vietnam Standard and Consumers Association (VINASTAS) award for excellence in product quality, business standards and customer service.



A CHILD'S BEST START

In Thailand, the MJN team decided to take its engagement with the Phayathai Babies Home—an orphanage and shelter that is home to over 200 children under the age of eight—to the next level. After identifying some issues with the milk room in the kitchen area, they didn't just fix it up. Instead, they redesigned, rebuilt and re-equipped the entire storage and preparation area. Additionally, they arranged for staff training at a local hospital and provided funds to hire a nutritionist.

Mead Johnson Now Using Green Technology to Power Facility

EVANSVILLE, Ind.--(BUSINESS WIRE)--Jun. 3, 2009-- Mead Johnson & Company announced today that it is now using landfill gas to meet a significant portion of its energy needs at the company's manufacturing facility in Evansville, Ind. The project, which is the first of its kind for Mead Johnson and in the city of Evansville, uses a "green" technology that has been proven safe and reliable.

The project has an estimated capacity to reduce net carbon dioxide greenhouse gas emissions by 24,000 metric tons per year. Annual environmental benefits of this reduction are equivalent to removing greenhouse gas emissions from 4,400 passenger vehicles, the carbon dioxide emissions from burning 125 railcars of coal, or the carbon absorbed by 5,500 acres of pine forests. Emission reductions were estimated using the U.S. Environmental Protection Agency Greenhouse Gas Equivalencies Calculator.

"Mead Johnson is committed to environmental stewardship and sustainability around the world," said Mead Johnson Senior Vice President, Supply Chain, Jeff Jobe. "We're pleased to be converting from natural gas, a fossil fuel, to landfill gas, a renewable energy source, for a majority of our energy usage at our Evansville facility."

Jobe added that the project is consistent with consumers' interest in the energy-efficiency practices of the companies with which they do business. "In addition to our commitment to product excellence, using a renewable source of energy is yet another example of how Mead Johnson is working to meet our customers' needs," he said.

Mead Johnson has been working over the past year with two companies to make the project possible. Republic Services, Inc., which provides the gas that occurs as a natural byproduct of the decomposition of organic materials at its Laubscher Meadows Landfill, and Ameresco, which designed and built the five-mile dedicated pipeline and is responsible for operating and maintaining it.

"The city of Evansville is dedicated to supporting projects and initiatives that improve the environmental, social and economic health of our community; and this is a great example of how we can partner with businesses to be stewards of the environment and achieve positive results," said Evansville Mayor Jonathan Weinzapfel. "With this project, Mead Johnson is once again demonstrating its commitment to improving the quality of life in our community."

About Mead Johnson

Mead Johnson & Company is a wholly owned subsidiary of Mead Johnson Nutrition Company (NYSE: MJN). Mead Johnson Nutrition, a global leader in pediatric nutrition, develops, manufactures, markets and distributes more than 70 products in 50 markets worldwide. The company's mission is to create nutritional brands and products trusted to give infants and children the best start in life. The company's "Enfa" family of brands, including Enfamil® infant formula, is the world's leading brand franchise in pediatric nutrition. For more information, go to meadjohnson.com.

About Ameresco, Inc.

Ameresco, Inc. is the largest independent comprehensive energy solutions provider in North America. Headquartered in Framingham, Mass., Ameresco utilizes innovative strategies, systems, and technologies for renewable and sustainable energy generation and infrastructure renewal, thereby reducing operating expenses, increasing energy reliability and enhancing the environment. For more information, go to ameresco.com.

About Allied Waste/Republic Services, Inc.

Allied Waste merged with Republic Services in December 2008. Republic Services, Inc. has been building on success since its inception in 1998, becoming an industry-leading provider of waste and environmental services. The company provides trash collection services to commercial, industrial, municipal and residential customers in 40 states and Puerto Rico. The company is headquartered in Phoenix, Ariz. and has more than 34,000 employees. For more information, go to republicservices.com.

Source: Mead Johnson Nutrition Company

Mead Johnson Nutrition Company
Pete Paradossi, 812-429-7413
Pete.Paradossi@mjn.com
or
Susan Wedeking, 812-429-5674
susan.wedeking@mjn.com

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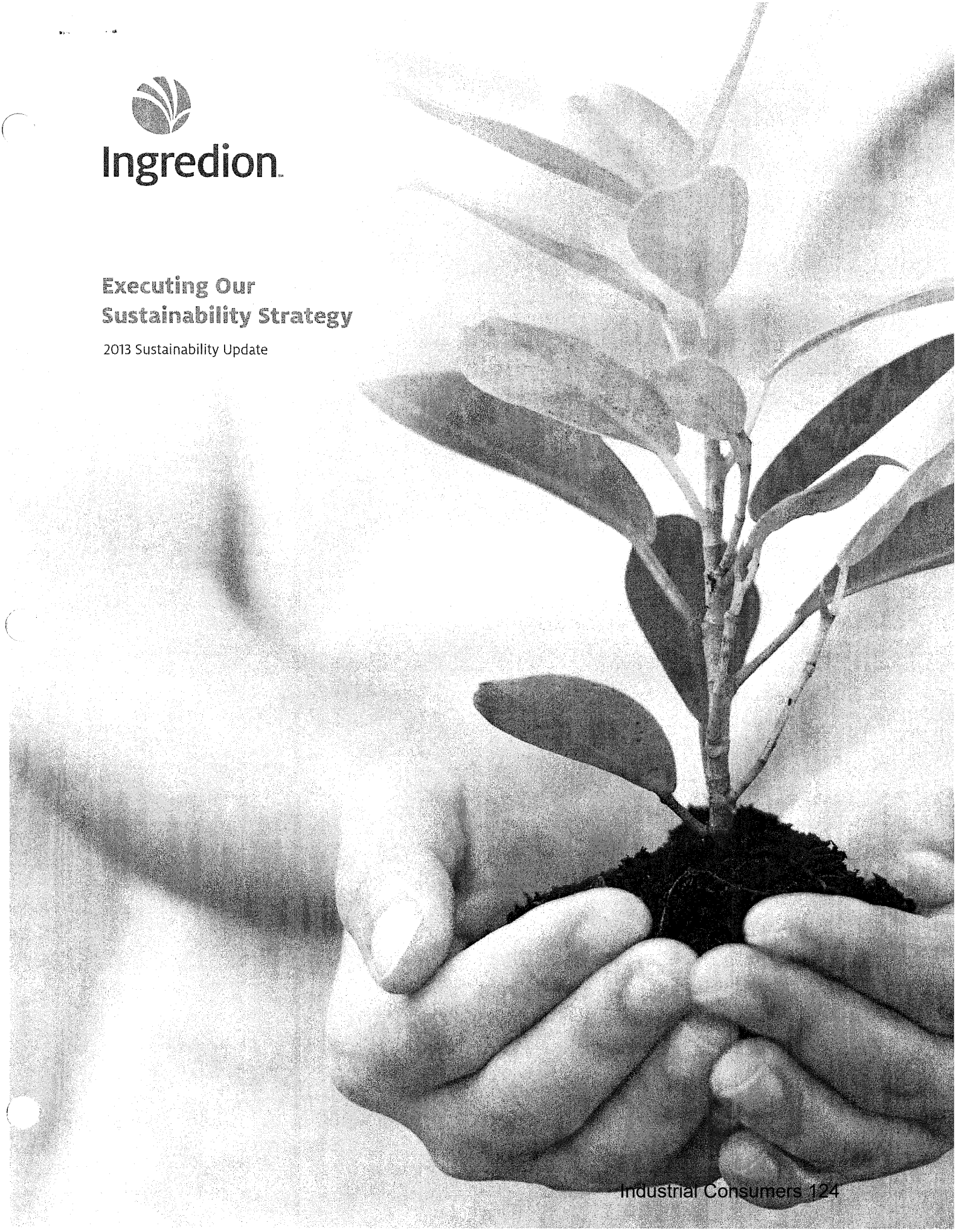
TAB 17

INGREDION

Ingredion

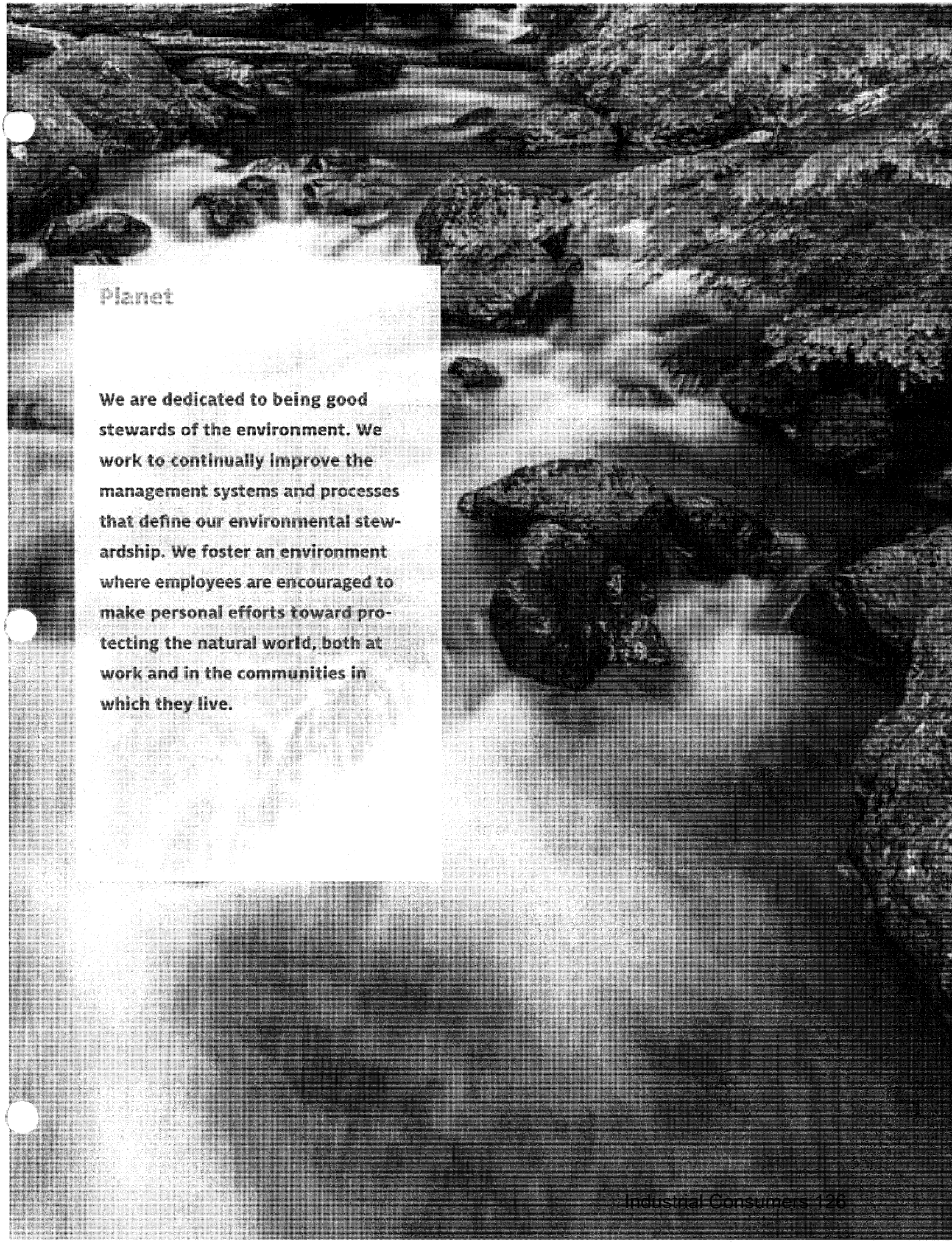
Executing Our Sustainability Strategy

2013 Sustainability Update



SUSTAINABILITY

Mission Ingredion's sustainability program is designed to develop a better business and build a better world by incorporating and encouraging sustainable practices that benefit our people, planet and products, and promote prosperity in the communities in which we operate. Our six core values of Safety, Quality, Integrity, Respect, Excellence and Innovation lie at the heart of everything we do. Our Policies on Business Conduct and our sustainability program provide guiding principles for our employees. It is through our commitment to maintaining these high moral and ethical standards that we continue to build on our success and add value for our employees, customers, stakeholders and communities.



Planet

We are dedicated to being good stewards of the environment. We work to continually improve the management systems and processes that define our environmental stewardship. We foster an environment where employees are encouraged to make personal efforts toward protecting the natural world, both at work and in the communities in which they live.

PLANET

At Ingredion, stewardship is more than just meeting regulatory requirements; it is about protecting the environment and working with the communities in which we operate to form relationships that help build a better world. Our sustainability program is thoughtfully aligned with internationally recognized protocols. This alignment allows for further benchmarking and guides our efforts to continually improve the environmental aspects of our manufacturing activities. Across our operations, we track key environmental and safety parameters, monitor facility performance, and share best practices.

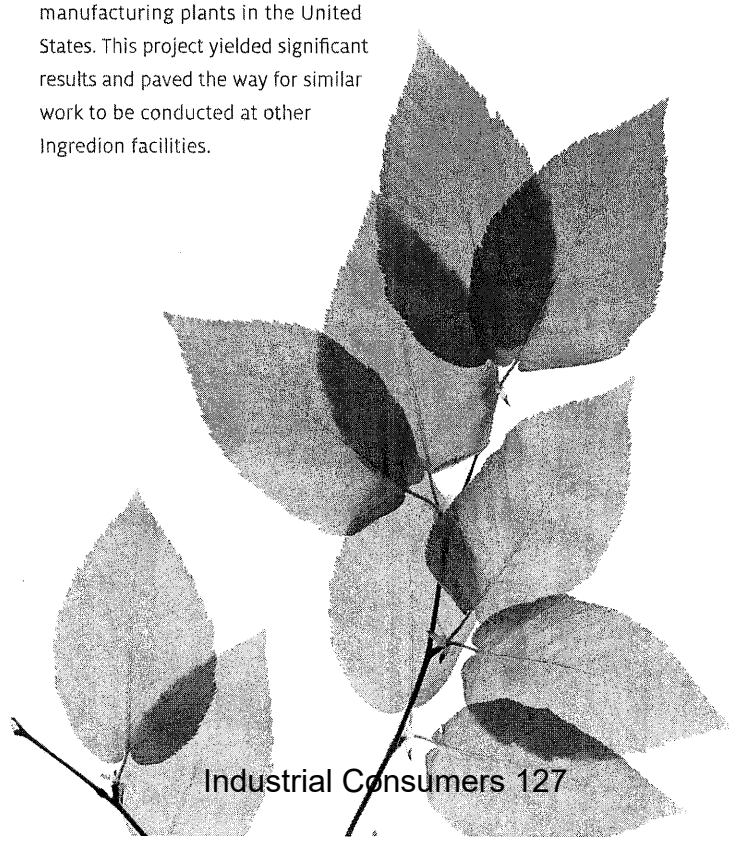
Community Engagement Ingredion continued its tradition of observing events devoted to environmental stewardship. Our facilities around the globe celebrated Earth Day and World Water Day, among others, by hosting a range of activities with members of the local community. The goal of these efforts was to share how individual actions can contribute to making the planet a better place to live.

Water Ingredion recognizes that water is an issue of increasing importance and one that touches every aspect of our existence. Water is vital to life, required to grow crops, and is a business necessity. As such, Ingredion designated water as a focus area for its sustainability efforts. To that end, we identified and reviewed a variety of recognized strategies to assess water availability and chose an ensemble of tools, including the World Business Council for Sustainable Development's Global Water Tool and the Aqueduct Baseline Water Stress assessment. These tools will help us better assess both current and future water scarcity risks in countries where we operate. And, we continue to review water usage and employ continuous improvement strategies for water management.

Energy Energy and greenhouse gas emissions are inexorably linked. Energy efficiency has long been a focus area for Ingredion as it helps us achieve manufacturing efficiency, manage our costs and be a good steward of the environment. Our well-established continuous improvement teams actively seek ways to achieve reductions in energy use at our manufacturing locations, which likewise achieve reductions in greenhouse gas emissions. These teams are often able to identify opportunities that can achieve year over year reductions.

External Affiliations In 2013 Ingredion continued its participation on the University of Cambridge Natural Capital Leaders Platform, where efforts focused on the development of a tool to help companies assess the environmental aspects shared between a company, its local community, and the ecosystem in making business decisions.

Internal Achievements Each year, Ingredion recognizes internal teams that successfully develop and administer notable programs that advance the company's sustainability agenda. In 2013, two teams were recognized with these prestigious awards. The first project focused on increasing corn yields in Pakistan by teaching local farmers new planting and growing techniques. The second award went to a team that developed a method to systematically reduce energy and water usage across manufacturing plants in the United States. This project yielded significant results and paved the way for similar work to be conducted at other Ingredion facilities.



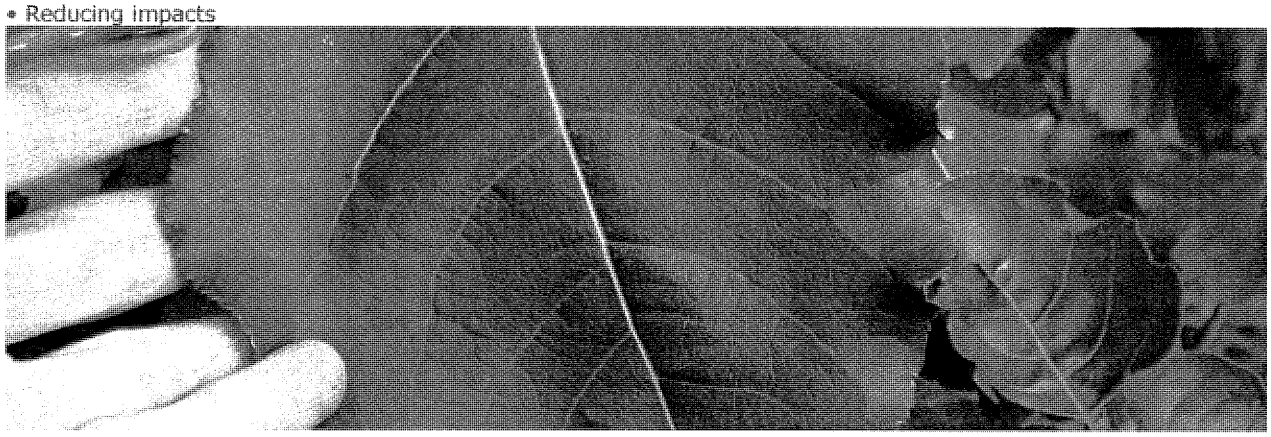
TAB 18

LEHIGH HANSON

Strategy and Management

At Lehigh Hanson, sustainability is a key pillar of our corporate strategy. We strive to operate and grow in a socially and ecologically responsible manner, while minimizing the impact of our business on the environment and society. We are dedicated to continuous environmental improvements and building on sustainability by:

- Giving highest priority to health and safety
- Delivering positive contributions to biodiversity
- Promoting sustainable construction
- Using waste as a resource
- Protecting the climate
- Reducing impacts



Challenges:

The cement and aggregates industries are marked by certain special characteristics and face a series of global sustainability challenges. more

Our Values:

Long-term business success can only be achieved through adherence to sustainability principles and responsible behavior toward customers, business partners and employees at all of our locations. more

Partnerships and stakeholder dialogue:

We know that we can only be successful as a company if we maintain cordial and cooperative relationships with the various stakeholders in society. more

Climate Protection

Energy supply security and climate change are among the most important challenges we face today. Because we operate in an energy-intensive industry, we contribute to efforts to halt climate change and expressly support the WBCSD & CSI goal of reducing carbon dioxide emissions by 20% by 2020. Energy efficiency holds the key to the future viability of our company. Through our local and global R&D, we are striving for lowering our clinker content for our products in both cement and concrete mixes.

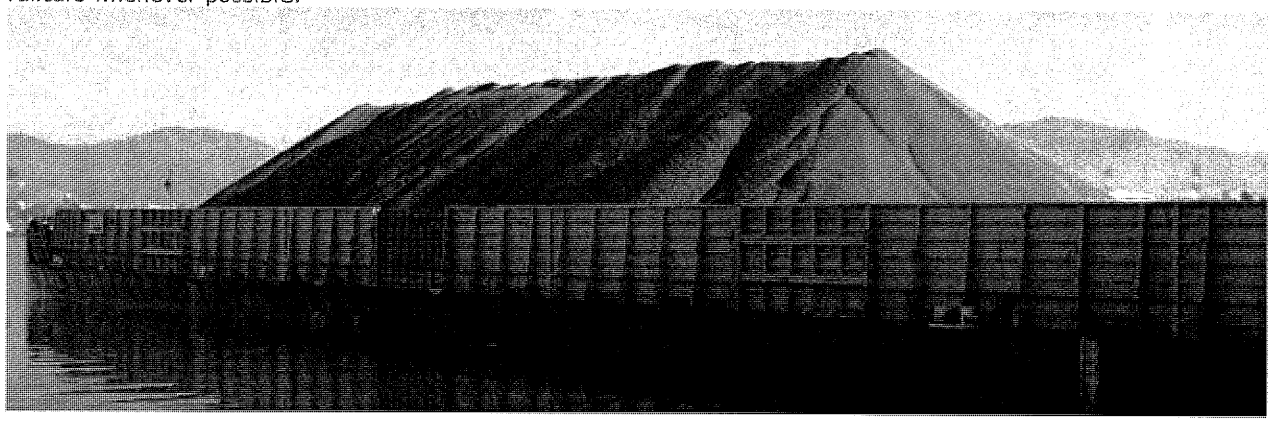
These day to day actions enable us to minimize the embodied CO2 in the products we deliver to our customers. We

deliver products that can help combat and prevent detrimental consequence of climate change by protecting people, property and the environment. Concrete has the inherent ability of tremendous strength & durability, resilience (wind, fire, floods/mold), thermal mass (energy saving wall systems) and long life; therefore conserving energy and landfill space.

Reducing Impacts

We are reducing the impact our company has on the environment. Among other things, we are implementing environmental protection best practices, increased benchmarking, implementing reporting methods, audits, and some water and environmental management systems. Continuous investments in the development of innovative technologies that reduce our environmental footprint have resulted in some cutting edge processes for us and for the industry.

We continue to work to reduce emissions and fuel consumption in every aspect of our business. Decisions such as the transportation and delivery of our aggregates and cement are weighed carefully in terms of ecological and environmental factors. We choose environmentally-friendly transportation methods such as barges and railcars whenever possible.



We are committed to complying with all applicable laws, standards and requirements. Our company seeks to play a leading role in the control and minimization of negative environmental effects.

http://www.lehighhanson.com/sustainability/strategy.aspx

TAB 19

TATE & LYLE

TATE & LYLE

Environmental Performance

We seek to operate our business in a way that is as environmentally sustainable as practical. By using resources such as energy and water more efficiently, and reducing waste, we aim to improve our environmental sustainability further while controlling operating costs.

Our approach
Tate & Lyle's environmental policy and standards apply to all our activities globally, and we aim to integrate environmental considerations into all major decisions.

Our facilities operate under local environmental authorisations and permits and we require strict compliance with these at all times. If a site inadvertently breaches an operating limit we seek to take steps immediately to resolve the issue and prevent reoccurrence.

We have procedures and programmes in place to manage and minimise the environmental impact of our operations, our packaging and our supply chain.
We have internal and external auditing processes. Our annual internal global compliance audit programme confirms compliance with our environmental and food safety, quality and health and safety management standards.

Additionally, our rolling programme of external, independent environmental compliance audits assures compliance with regulatory requirements.
We include annual environmental sustainability targets in the performance objectives of employees from Executive Committee to plant level. These include energy use, water use and waste reduction, amongst others.

Overall, we are working to address environmental considerations across the life cycle of our products, from our agricultural supply chain to how our products are packaged and transported.

Within our own operations and joint ventures we focus on those aspects of our activities that have the greatest potential impact on the environment, namely our use of energy (and consequent air emissions and carbon footprint), our water use, and waste management.

Beyond our own operations we focus our attention on our agricultural raw material and ingredient supply chain, the transportation of our products to our customers, and our products' packaging.

Operational performance
In calendar year 2012, compared with 2011:

Energy use per tonne of production increased by 1.6% due to changes in our production mix – with the manufacture of more speciality products, and sitespecific factors such as the installation of new air emissions control equipment.

Since 2008 we have reduced energy use per tonne of production by 10%. Energy efficiency projects implemented this year included optimisation of the steam system at our joint-venture plant in Boleraz, Slovakia; and the installation of energy efficient lighting at Sycamore, Illinois.

Carbon footprint from energy use decreased by 1.1% per tonne of production due to changes in our fuel mix, alongside energy efficiency projects at many locations.

Since 2008 we have reduced CO_2 emissions per tonne of production by 11%.

Water use per tonne of production decreased by 2.1% due to various water efficiency projects including: at Dayton, Ohio, where water re-use and recycling implemented in 2012 will save up to 45% of the plant's annual water use; and at Decatur, Illinois, which received General Electric's 'Return on Environment' and 'Proof not Promises' awards for water saving initiatives in 2012.

Since 2008 we have reduced water use per tonne of production by 9%.

Waste to landfill decreased by 11% per tonne of production, due to good progress with waste reduction, re-use and recycling programmes at many facilities. For example, at Lafayette South, Indiana, external waste recovery facilities, which use anaerobic digestion to produce energy from waste, were used to reduce our waste to landfill following on from similar work at our Sagamore plant in Lafayette, Indiana, the previous year.

Since 2008 we have reduced waste to landfill per tonne of production by 26%.

Looking ahead
We aim to improve environmental performance in the coming year by focusing on the following areas:

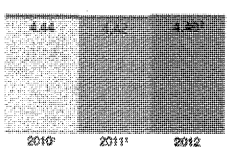
capital projects and operational practices to reduce our energy use, CO_2 emissions, water use and waste to landfill per tonne of production

working with our customers on reducing our combined environmental impact

working with our suppliers and others to promote sustainable agriculture.

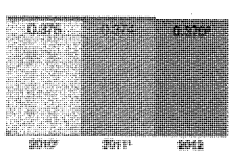
Energy use

GJ per tonne production



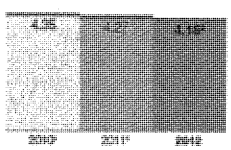
Primary carbon footprint

Tonnes CO_2 per tonne production



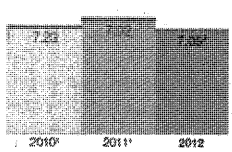
Water use

Cubic meters per tonne production



Waste to landfill

Tonnes per '000 tonnes production



1 Previously reported numbers for 2010 and 2011 have been adjusted to remove the energy use, carbon footprint, water use and waste arising from the Sucromiles joint venture, our share in which was sold during calendar year 2012.
2 Refers to 2012 data that has been assured by PricewaterhouseCoopers LLP (see page 39).

Environmental sustainability targets
We have four medium-term environmental sustainability targets

Target by end of 2016	Calendar year 2012 status
Reduce CO_2 emissions from energy use by 12.5% per tonne of production (baseline year 2008)[1]	11% reduction in CO_2 emissions per tonne of production versus 2008
Implement packaging reduction programmes with customers representing >50% of sales (£)	Programmes initiated with customers representing >9% of sales (£)
Implement transport efficiency programmes with customers representing >50% of sales (£)	Programmes initiated with customers representing >9% of sales (£)
Implement sustainable agricultural sourcing programmes for our top 20 agricultural raw materials and ingredients by volume	In 2012 we evaluated our principal 25 agricultural raw materials and ing

1 We recognise that installing new air emissions control equipment at several locations over the next few years and the manufacture of more speciality products will make it more challenging to reduce our energy use and CO2 emissions in the medium term

TAB 20

VERTELLUS SPECIALTIES, INC.

Vertellus®
Smart Chemistry. Our Specialty.®

SEARCH

Products | Capabilities | News & Events | Careers | About | Investors | Contact

ABOUT

- **Smart Chemistry**
- **Leadership**
- **Locations**
- **Values**
- **Responsible Care**
- **History**
- **Code of Conduct**

ENDURING COMMITMENTS IN THE MANAGEMENT OF CHEMICALS

Vertellus Specialties Inc. is proud to participate in the American Chemistry Council's Responsible Care® initiative. Our industry creates products and services that make life better for people around the world – both today and tomorrow. The benefits of our industry are accompanied by enduring commitments to responsible care in the management of chemicals worldwide. We will make continuous progress toward the vision of no accidents, injuries or harm to the environment and will publicly report our global health, safety and environmental performance. We pledge to operate our companies in ethical ways that increasingly benefit society, the economy and the environment while adhering to the following principles:

RESPONSIBLE CARE®
OUR COMMITMENT TO SUSTAINABILITY
25 YEARS

- To seek and incorporate public input regarding our products and operations.
- To provide chemicals that can be manufactured, transported, used and disposed of safely.
- To make health, safety, the environment and resource conservation critical considerations for all new and existing products and processes.
- To provide information on health or environmental risks and pursue protective measures for employees, the public and other key stakeholders.
- To work with customers, carriers, suppliers, distributors and contractors to foster the safe use, transport and disposal of chemicals.
- To operate our facilities in a manner that protects the environment and the health and safety of our employees and the public.
- To support education and research on the health, safety and environmental effects of our products and processes.
- To work with others to resolve problems associated with past handling and disposal practices.
- To lead in the development of responsible laws, regulations and standards that safeguard the community, workplace and environment.
- To practice responsible care by encouraging and assisting others to adhere to these principles and practices.

VERTELLUS HEALTH, SAFETY, SECURITY AND ENVIRONMENTAL PERFORMANCE POLICY

Vertellus Specialties Inc. and its subsidiaries are committed to the protection of the environment and to the safety and health of our employees and communities. We are committed to compliance with the legal and Responsible Care®-related requirements to which our operations are subject. It is each employee's responsibility to continuously improve our health, safety, security and environmental performance using the Guiding Principles of Responsible Care®. We are committed to the safe and environmentally sound development, manufacture, distribution, use and disposal of our products.
– Rich Preziotti

Vertellus®
Smart Chemistry. Our Specialty.®

SEARCH

Products | Capabilities | News & Events | Careers | About | Investors | Contact

PRESS RELEASES

Vertellus Enhances Relationship...
Vertellus Infrastructure Enhancements...
Vertellus Launches New...
Vertellus Property Transformed...
Specialty Chemicals Provider...
Vertellus Specialties Introduces...
Vertellus Introduces NiaPro™...
Vertellus Specialties Employees...

Latest Releases | 2013 | 2012 | 2011 | 2010

VERTELLUS PROPERTY TRANSFORMED INTO 43-ACRE SOLAR FARM

Maywood Solar Farm will curb emissions by 13,000 metric tons annually

(April 11, 2014, Indianapolis, Ind., USA) – An idle property owned by Vertellus Specialties Inc. has been transformed into an alternative energy source that will curb carbon dioxide emissions by more than 13,000 metric tons annually for up to 30 years. On April 9, Vertellus joined project partners in a ribbon cutting ceremony celebrating the newly operational Maywood Solar Farm located on 43 acres near Vertellus' Indianapolis headquarters.

The solar farm reflects Vertellus' commitment to investing in continual process improvements that benefit customers and the communities in which the company operates. Remarking on the solar power facility, Vertellus President and CEO Rich Preziotti said, "The projected reductions in carbon dioxide emissions are substantial – equal to the annual carbon emissions of more than 2,700 passenger cars or 1,800 homes. The solar farm is transforming unused land into a productive asset."

The 10.86 megawatt direct current solar farm was completed under the 2012 Indianapolis Power & Light Company's (IPL) Rate Renewable Energy Production (REP) program. "The U.S. energy environment is highly competitive, and Vertellus is proud to partner with like-minded parties that share our interest in energy efficiency. This solar facility underscores Vertellus' commitment to invest in technologies and infrastructure that benefit the environments where our employees live and work," Preziotti said.

Ready access to the property owned by Vertellus facilitated a timely production timeline. Construction began in July 2013, and the Maywood Solar Farm was completed and operational in March 2014. Partners in the solar farm effort included IPL, Hanwha Q CELLS, the U.S. EPA, and Indiana Department of Environmental Management.

Last updated: 4/14/2014

Home | Products | Applications | About | Contact

TAB 21

BP

Energy use

Significant amounts of energy are used to produce, process and deliver our products

Improving energy efficiency can help us to minimize our environmental impacts, including reducing greenhouse gas (GHG) emissions and other air emissions. There can also be powerful economic incentives to reduce energy use.

Our approach

As part of our operating management system, we require our operations to incorporate energy use considerations into their business plans and to assess, prioritize and implement technologies and systems to improve energy use.

We require larger projects, and those for which emissions costs would be a material part of the project, to apply a standard carbon cost to the projected GHG emissions over the life of the project. This helps to anticipate a future with a potentially higher carbon price and greater regulatory requirements associated with GHG emissions. Additionally, through our venture investing, we are working to develop new energy-efficient technologies and options for carbon management.

Developing sustainable energy solutions

Climate change

Greenhouse gas emissions

Our performance

In 2013, BP's total reported primary energy consumption was approximately 0.82 billion gigajoules (GJ) (2012 0.95bn GJ, 2011 0.96bn GJ). The reduction in energy use in 2013 is primarily due to the divestment of Texas City and Carson refineries.

Primary energy consumption by source

Proportions vary across different businesses and regions. Most of our energy (77%) is taken directly from our own hydrocarbon production (for example fuel gas), as these typically provide the most cost-effective and readily available sources of energy. The remaining energy, in the form of natural gas, steam and electricity, is imported from outside our operations.

Upstream

Upstream activities account for about 50% of all the energy consumed by BP. Total primary energy consumption in these operations was 0.41bn GJ in 2013, (2012 0.42bn GJ, 2011 0.43bn GJ). Primary energy consumption includes the energy used for the extraction and initial processing of hydrocarbons in our operations and excludes the energy content of hydrocarbons flared and vented.

The energy performance measure that we use for our upstream operations is the energy used by or lost from our operations as a percentage of the energy produced by our operations. This production/consumption and loss measure differs from primary energy consumption because it includes the hydrocarbons that are flared and vented into the atmosphere as well as the energy used for extraction and initial processing.

In our operations, the production/consumption and loss measure shows an overall increase, although the percentage is generally lower in our newer assets than in our maturing assets. This is because the amount of energy required to produce hydrocarbons from mature reservoirs, which become depleted of hydrocarbons and reservoir energy, does not decline at the same rate as the production declines. Also, more energy-intensive secondary and enhanced oil recovery techniques can contribute to increased energy consumption when used to maximize recovery and limit decline in certain assets.

The overall production/consumption and loss of 7.5% has remained unchanged from 2012 to 2013. Approximately 79% of our production/consumption and loss was from energy consumption within our facilities, with the remaining 21% from flaring and venting.

Flaring

Unconventional gas and hydraulic fracturing

Upstream production consumption / loss

Refining

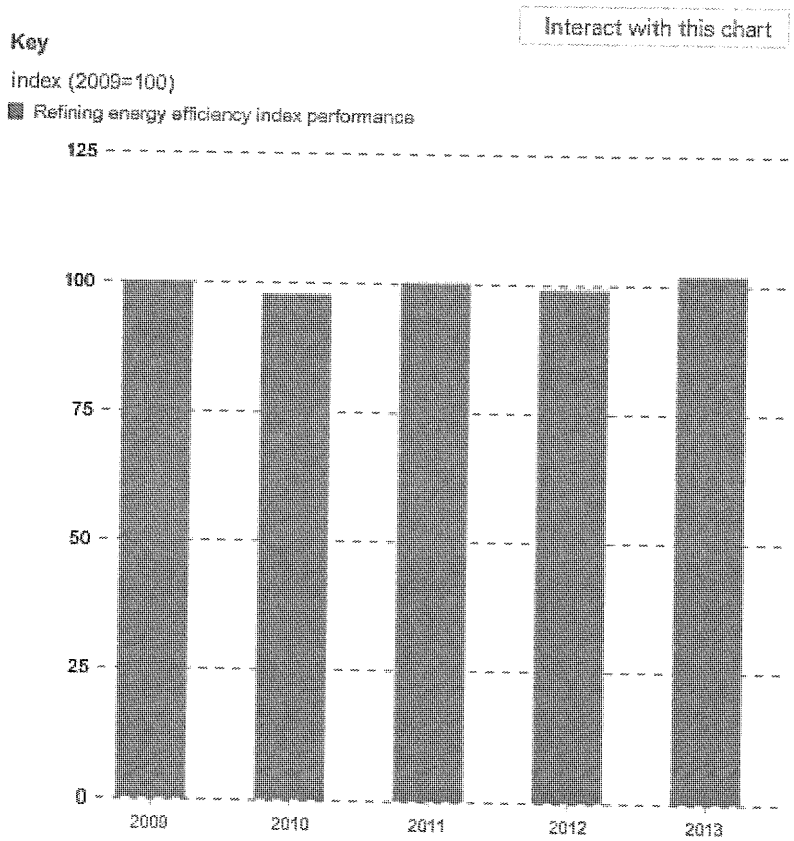
Refining accounted for about 36% of all the energy consumed by BP in 2013. Total primary energy consumption in BP's operated refineries in 2013 was 0.30bn GJ, (2012 0.42bn GJ, 2011 0.41bn GJ). The reduction in energy consumption in 2013 was primarily due to the divestment of Texas City and Carson refineries in the US.

Energy management is part of a wider drive for plant efficiency and utilization and is incorporated into our continuous improvement programmes. We measure the energy performance of our refining business using the Solomon Energy Intensity Index (EII), an industry measure that benchmarks energy efficiencies. All of our refineries set and track progress against an EII target.

We are working to improve the EII of our refineries. For example, from 2010 to 2013, our Toledo refinery in the US improved its EII by 8%. The site worked with energy engineers to identify opportunities for improvement, including updating technologies and improving how we manage and measure energy use in the refinery's operating units. We are sharing the lessons learned from Toledo with our refineries around the world.

In 2013, overall refining EII increased due to the start-up and operational impacts of the Whiting refinery modernization project.

Refining energy efficiency index performance

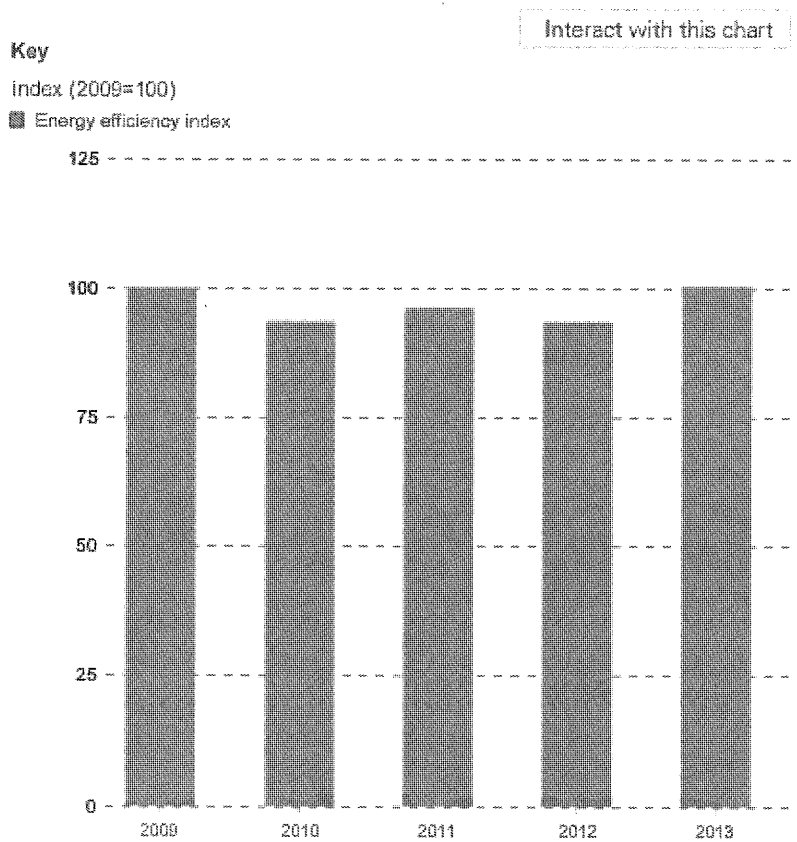


Petrochemicals

Our petrochemicals businesses account for about 10% of all the energy consumed by BP. Total primary energy consumption in our petrochemicals businesses in 2013 was 0.079bn GJ (2012 0.081bn GJ, 2011 0.084bn GJ). Our petrochemicals businesses track energy consumption in terms of primary energy consumed per unit of production.

By using a systematic approach, these businesses have delivered a 67% reduction in energy usage between 2004 and 2013. The approach, designed by our petrochemicals team, creates individually tailored improvement plans for each of our eight petrochemical plants. Improvements have included technology changes and process optimization that have resulted in less consumption of purchased fuel and power.

Petrochemicals energy efficiency



Attestation

The information on this page forms part of the information reviewed and reported on by Ernst & Young as part of BP's 2013 sustainability reporting. View the full assurance statement. (/en/global/corporate/sustainability/about-our-reporting/assurance/Independent-assurance-statement.html)

TAB 22

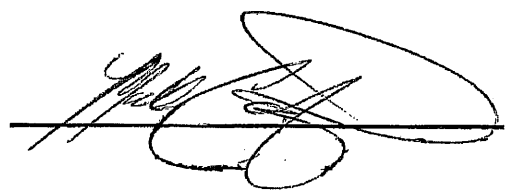
HAYNES INTERNATIONAL, INC.

HAYNES
International

ENERGY POLICY

Haynes International, Inc. recognizes the importance of efficient, cost-effective and environmentally responsible use of energy. To this end, Haynes International commits to:

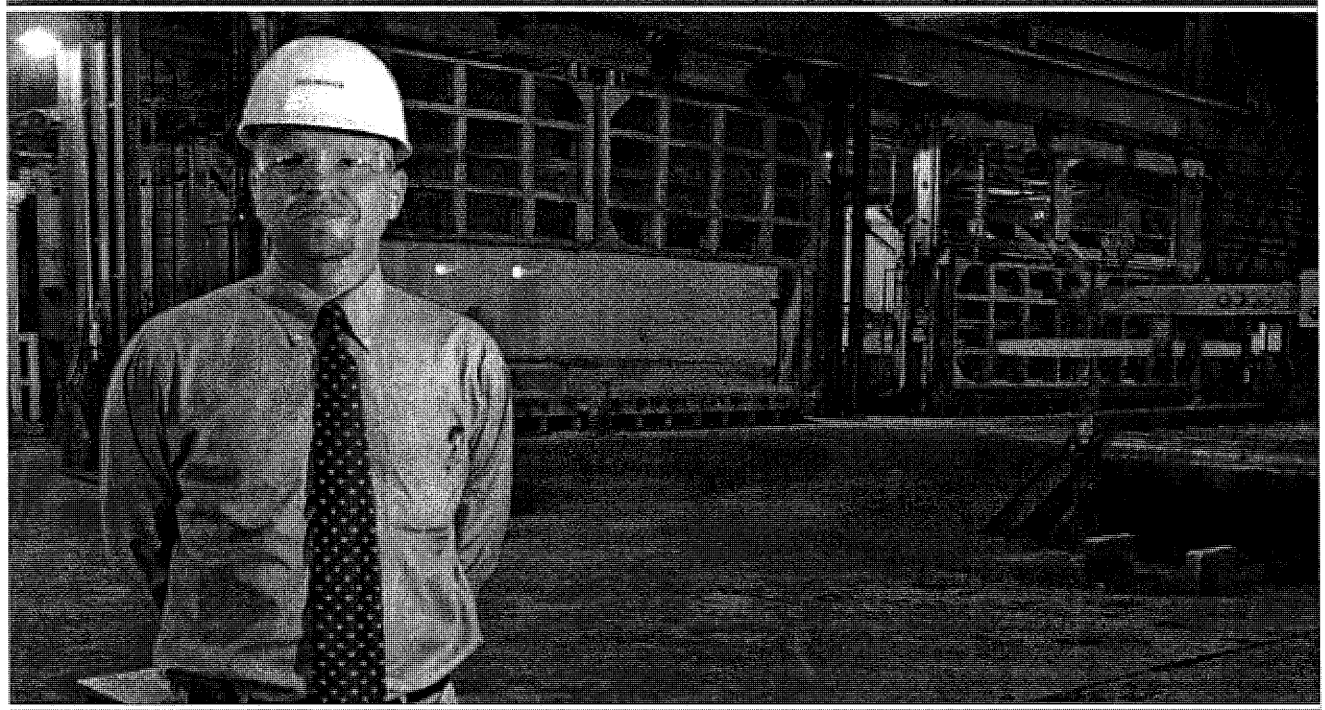
- Achieve continual improvement of its energy performance;
- Establish specific measurable energy objectives and targets consistent with the energy policy;
- Ensure the availability of information and of necessary resources to achieve objectives and targets;
- Comply with applicable legal and other requirements to which it subscribes which relate to its energy use; and
- Purchase energy efficient products and services when practical.



Mark Comerford
President and CEO
Haynes International, Inc.

S- 27-6429

Energy Efficiency Services –
Haynes International Inc., Kokomo IN



TAP's Energy Efficiency Services team has worked on **228** projects around the state training **420** employees on how to lower their energy usage and costs

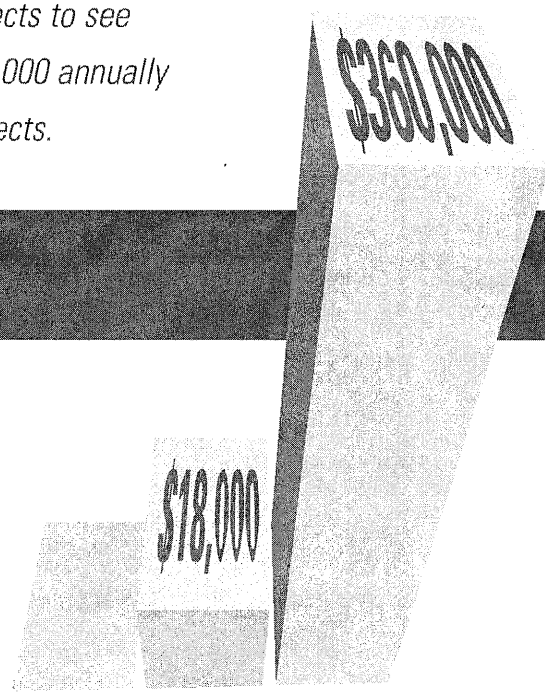
"The collaboration with Purdue has provided us with the tools to identify and achieve our reduction goals. We have been extremely pleased with the level of support provided by the Purdue/TAP Energy Efficiency Services. The training sessions have been very informative and we have been able to apply that knowledge to our current plant operations and to identify a number of potential energy savings projects."

- Greg Morrow, Environmental Manager
Haynes International Inc.

As a leading developer, manufacturer, and marketer of high-performance alloys for use in corrosion and high-temperature applications, Haynes International Inc. secures annual revenues of approximately $560 million.

In 2007, Haynes spent $9.5 million on natural gas and $5 million on electricity for the Kokomo operations, and like other energy-intensive manufacturers, needed to explore ways to reduce energy consumption.

Working with TAP and the Energy Efficiency Practitioner Training program, Haynes implemented a five-person Energy Savings Team to identify and implement energy savings projects that have saved the company approximately $18,000 in natural gas costs in just three months. Haynes expects to see natural gas cost savings of nearly $360,000 annually upon the completion of all the EES projects.



BY THE NUMBERS:
How TAP worked for Haynes International Inc.

We have saved $18,000 total in natural gas costs in three months since working with TAP, with annual savings expected to be in the neighborhood of $360,000.

TAB 23

U.S. GYPSUM

USG Environmental Policy

At USG, we believe that environmental stewardship is critical to maintaining and enhancing our leadership position in the construction products sector. It is our policy to conduct our worldwide operations in an environmentally responsible manner, consistent with the following principles:

- Comply with all applicable legal requirements.
- Proactively, identify and manage environmental risks and opportunities throughout our value chain and our products' lifecycle.
- Incorporate environmental safeguards or solutions and technological innovations into our process and product design to prevent pollution.
- Monitor and continuously improve our environmental programs and performance.
- Be a good neighbor and corporate citizen, factoring stakeholder concerns into our decision making process.
- Provide comprehensive and transparent information when communicating our environmental performance with stakeholders.
- Work collaboratively with stakeholders and others to develop, manufacture and advance products and systems that contribute to sound building practices, sustainable solutions and improvements to health and safety.
- Provide effective communication for the safe and proper use of our products.
- Promote a culture of environmental awareness and responsibility across the company and integrate environmental impacts into our daily business decisions.

We will maintain management systems to ensure these principles are implemented in practice, including clearly defined roles and responsibilities, competent employees, and periodic assessments. We will continue ongoing monitoring of performance to verify that this policy is being effectively implemented. Employees are responsible for understanding this policy and its impact on their daily activities and are encouraged to apply environmentally responsible practices in the workplace and in their daily lives.

BUILDING IN HARMONY

USG CORPORATION SUSTAINABILITY UPDATE - DECEMBER 2011

ECOBLUEPRINT™ PRIORITY:

ENHANCE ENERGY MANAGEMENT

- Increased energy efficiency
- Reduced embodied energy
- Streamlined manufacturing start-up and shutdown procedures
- Implemented structured program to create sustained energy savings
- Reviewed, and continue to evaluate, low-carbon energy technologies

The recent economic downturn created a challenging environment for energy management as manufacturers, including USG, scaled back production. Multiple plant start-up and shutdown sequences can diminish energy efficiency. But despite this difficult period, USG reduced energy consumption 7.0 percent on a per-unit production basis for our main product lines since 2008. This diligent focus on energy conservation over the last few years has contributed greatly to our overall reduction in greenhouse gas emissions since 2005, our baseline.

In the event of planned downtime, our plants have detailed checklists of loads to be de-energized, as well as specific sequences for shutting down those loads. The result is a set of best practices that, when consistently applied, can reduce the amount of energy used during these periods by 50 percent or more.

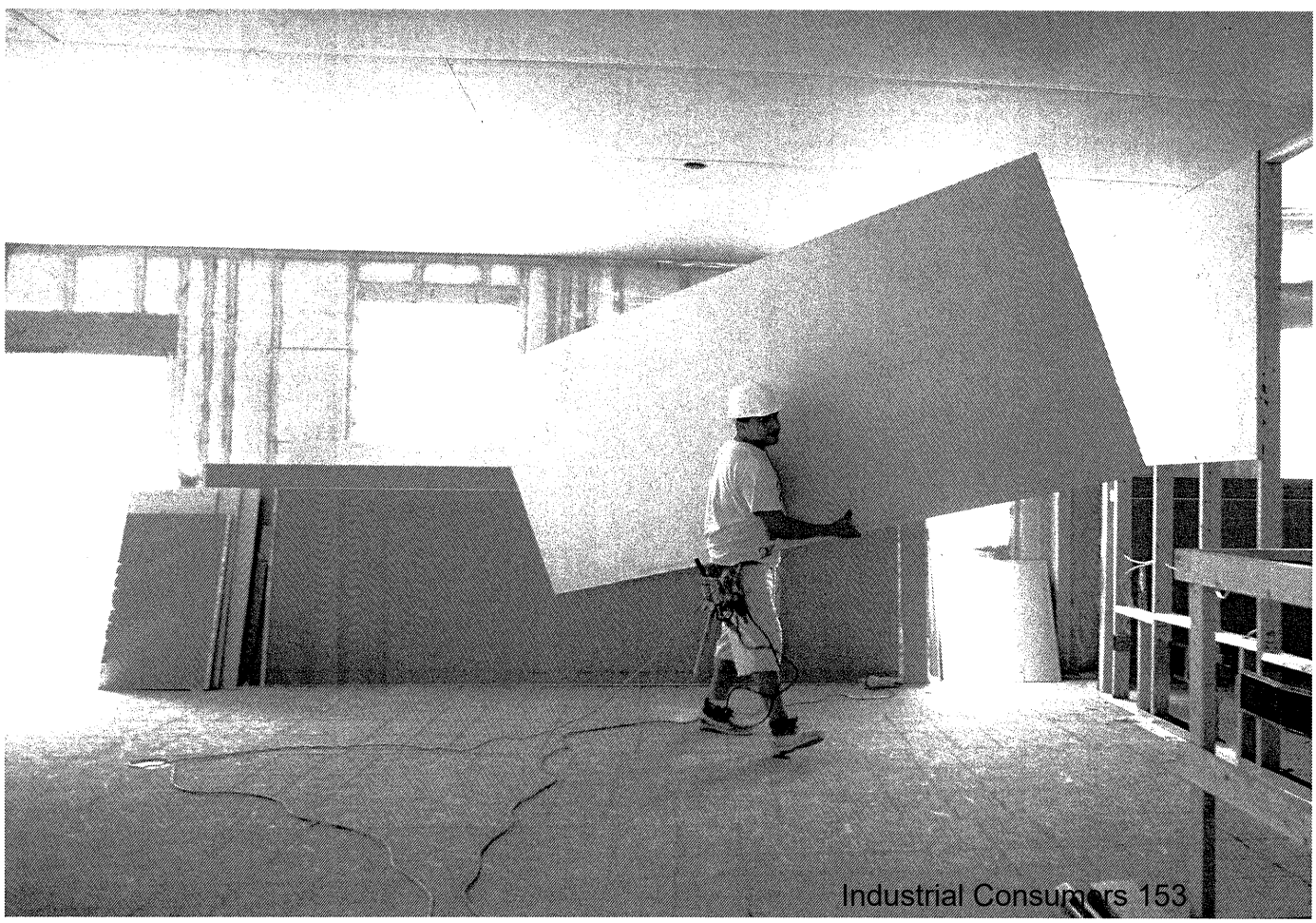
We implemented a new USG Production System that provides a uniform and structured approach across all USG operations to produce sustained and continuous improvement. As part of the system rollout, each plant was provided an Energy Capability Improvement Guide to benchmark its existing energy performance and set priorities for improving operations. Many of our plants invested significant time, effort and capital to make improvements with impressive results.

Our Aliquippa, Pennsylvania, plant installed new paper edge heaters that use one-sixth the energy of traditional gas-fired heaters. Our Shoals, Indiana, facility improved their synthetic gypsum drying process efficiency by recirculating waste heat. In Baltimore, Maryland, our plant has improved kiln performance with aggressive air- and heat-leak detection, including thermal imaging, and has reduced natural gas usage by 11 percent per thousand square feet.

Obviously USG can't control the economic downturn's reduced business opportunities, but we can, and have, made our plants more competitive by reducing energy consumption. In turn, using less energy means generating less greenhouse gas emissions. And we anticipate further long-term energy and greenhouse gas reductions through decreasing the embodied energy of our products and the utilization of low-carbon technologies.

The introduction of SHEETROCK® Brand UltraLight Panels demonstrates our efforts to reduce the overall embodied energy of a product. Aside from the product's improved application performance and various environmental attributes, the panels' lighter weight results in up to a 20 percent reduction in transportation energy.

USG is also actively investigating several energy technologies that have the potential to reduce the carbon footprint of our manufacturing operations. However, as is often the case when considering such technologies, significant evaluation is required to ensure they can produce verifiable reductions for the long term without adverse environmental impacts.



TAB 24

SUBARU OF INDIANA AUTOMOTIVE, INC.

SUBARU of INDIANA AUTOMOTIVE, INC.

ENVIRONMENTAL POLICY

Subaru of Indiana Automotive, Inc. (SIA), headquartered in Lafayette, IN is a passenger car assembly plant owned by Fuji Heavy Industries Ltd. of Japan. This policy derives from the commitments outlined in the **FHI Environmental Conservation Program** and **Subaru North American Environmental Committee** (N.A.E.C.) directives.

SIA understands its responsibility to the global environment, society at large, our customers, and our associates. As we conduct our business operations into the future, we commit to establish and maintain an effective environmental management system that extends further than just meeting the stated environmental laws and regulations, and that encompasses the integration of sound environmental practices in all of our business decisions. It is our goal to:

ELIMINATE ENVIRONMENTAL RISKS OF OUR OPERATIONS

by:

- **Complying with all environmental laws and regulations and other requirements related to our significant aspects**
- **Implementing effective pollution prevention systems that protect our air, land and water**
- **Conserving natural resources, by reducing, reusing and recycling materials**
- **Continually improving our Environmental Management System (EMS)**
- **Creating associate awareness and commitment to SIA's Environmental Policy**

Subaru of Indiana Automotive, Inc. is commited to being a world-class leader in environmental performance. This policy provides the framework to establish our environmental objectives and targets. It is communicated to all SIA associates and on-site contract personnel, and is available to the general public.

Signature on File with BPA Section
SIA President & CEO

420 F01 – Rev 2.3
Issued: 2/19/13

Subaru of Indiana Automotive, Inc. (SIA), a subsidiary of Fuji Heavy Industries, Ltd., is home of the North American Subaru production. Models built at the Lafayette, Indiana plant include the Subaru Legacy, Outback and Tribeca. SIA also produces the Toyota Camry under contract with Toyota. SIA employs over 3,700 Associates, and every Associate is committed to quality, safety and environmental stewardship. View our NEWSLETTER for SIA news!

11.10.98 - ISO 14001 Certification

1.13.02 - Designated a Backyard Wildlife Habitat by the National Wildlife Federation

3.17.95 - ISO 9001 Certification

9.24.98 - TPM Award of Excellence

9.23.02 - Received the 2002 American Business Ethics Award

9.23.09 - SIA Recognized as one of Indiana's Healthiest Employers by IBJ and Mavum Consultir

10.30.03 - Received the 2003 Governor's Award for Environmental Excellence (Recycling/Reuse category)

5.4.04 - Achieved zero landfill status

2.25.05 - ISO 14001 Recertification

9.20.06 - Received the 2006 Governor's Award for Environmental Excellence (Five Years Continuous Improvement category)

10.19.06 - Received the 2006 EPA WasteWise New Partner Gold Achievement Award

11.15.07 - Received 2007 WasteWise Industrial Material Recycling Gold Achievement Award

10.29.08 - Received 2008 WasteWise Climate Change Gold Achievement Award

3.22.10 - Received 2009 EPA WasteWise Community Involvement Gold Achievement Award

1.9.11 - Named "Greenest Manufacturing Plant in America" at the 15th Annual Urban Wheel Awards

1.7.11 - Received American Manufacturing Strategies' Green Manufacturing Award

9.20.12 - Named finalist for Sustania Award, an international award recognizing sustainable solutions around the world

11.19.13 - Received Campbell Institute/Stewardship Action Council Innovation Challenge Award for zero waste achievement.

10.4.01 - Award for Excellence in Consistent TPM Commitment

11.19.01 - ISO 9001:2000 Certification

12.10.03 - Received the TPM Special Award

2.25.05 - ISO 9001 Recertification

9.20.11 - Received 2010 Toyota Motor Engineering & Manufacturing Platinum President's Quality Award

11.7.11 - Inducted into AMSA Hall of Fame

10.23.12 - Received 2011 Toyota Motor Engineering & Manufacturing Platinum President's Quality Award

7.26.13 - Received J.D. Power Platinum Plant Assembly Line Quality Award for Camry production

7.26.13 - Received 2012 Toyota Motor Engineering & Manufacturing Platinum President's Quality Award

1.28.10 - United Way Best Overall Campaign Awa (500+ Employees)

10.1.12 - Received Governor's Service Award for Corporate Service

1.26.12 - United Way Best Overall Campaign Awa (500+ Employees)

11.1.12 - Employee Campaign Coordinator Award SIA's United Way Campaign Chair, Rick Johnson

"Sustainability is operating in a way that meets our current needs without compromising the needs of the future."

SIA is an industry leader in environmental stewardship. It goes way beyond recycling. It's a way of life here at SIA. Every SIA Associate is dedicated to finding new and innovative ways to become better stewards of our environment and our track record reflects it!

SIA's Environmental Firsts:

1994: 1st U.S. auto plant to become smoke-free

1998: 1st U.S. auto plant to earn ISO 14001 Certification for Environmental Management

2002: 1st U.S. auto plant to implement an on-site solvent recovery and reuse system

2003: 1st U.S. auto plant to be designated a Backyard Wildlife Habitat by the National Wildlife Federation

2004: 1st U.S. auto plant to achieve zero landfill

2012: 1st U.S. auto plant to earn ISO 50001 Certification for Energy Management

If you put a single bag of trash at your curb this week, you've sent more to a landfill than SIA will this entire year! View our Environmental Awards.

FOR SIA'S ENVIRONMENTAL POLICY, CLICK HERE.

Even SIA's recycling bins are mad from recycled barrels. Each one i color coordinated for quick and ea identification on the production lin

Watch how SIA turns one idea into industry-leading environmental program

SIA was the first U.S. auto plant to achieve zero landfill. By reducing, reusing and recycling, SIA avoids sending any waste to a landfill for disposal.

§ Scrap metal from the stamping shop is collected and sent off to become smaller car parts.
§ Over-spray from the paint shop is collected and sent off to become safety barricades on highways.
§ We've eliminated waste from the weld testing process by using an ultrasonic weld test instead the traditional destructive weld test.
§ Glass from used light bulbs are turned into reflective road striping.
§ The Styrofoam and plastic packaging that is used to ship part to SIA is sent back to the part suppliers to be used again and again.
§ In the body shop, weld slag is swept up, collected in large barrels and sent to other countries to reclaim the copper. We even recycle our dust!

SIA is a founding member of the Climate Registry.

In 2008, SIA was given the EPA Wastewise Award for Climate Change.

In 2012, SIA became the first U.S. Auto plant to earn ISO50001 certification for Energy Management.

SIA continually looks for ways to reduce energy use, thereby reducing our impact to the air.

The water leaving SIA's property is cleaner than the water when it enters it. Through a complex filtration system teamed with continuous reductions in water use, SIA has proven that it takes water conservation seriously by being the only U.S. auto plant to become a Backyard Wildlife Habitat by the National Wildlife Federation. That means that the land and water surrounding SIA are clean and safe enough to support native wildlife.
The ponds and wooded areas on SIA's 832-acre site are home to the American Bald Eagle, the Great Blue Heron, coyote, deer, Great Horned Owl, rabbit, beaver, muskrat, egret, vultures, hawks and many more.

We know that the best way to sus the earth for future generations, i mold the youth of today into environmental stewards of tomorrov SIA is the founder of STARS (Stud and Teachers Achieving Recyc Success). Developed in 2005, educational outreach program aim educating, mentoring, encouraging rewarding schools for becor stewards of the environment.

Learn more about STARS.

SUBARU of INDIANA AUTOMOTIVE, INC.

5500 State Road 38 East Post Office Box 5689 Lafayette, Indiana 47903
Phone 765-449-1111 FAX 765-449-6888

June 4, 2012
FOR IMMEDIATE RELEASE

Contact: Jennifer McGarvey
(P) 765.449.6269 (C) 765.413.5531
jennifer.mcgarvey@subaru-sia.com

Subaru of Indiana Automotive, Inc. Becomes First U.S. Car Manufacturing Plant to Receive ISO 50001 Certification

(Lafayette, IN) DEKRA Certification, Inc., presented Subaru of Indiana Automotive, Inc. (SIA) with ISO 50001 Certification today, making SIA the first car manufacturing plant in the U.S. to achieve this internationally recognized accreditation.

ISO is the International Organization for Standardization which provides business, government and society with practical tools for sustainable development economically, environmentally and socially. ISO standards represent a global consensus on the state of the art in the subject of that standard.

Launched in 2011, ISO 50001 outlines the internationally recognized requirements for energy management systems (EnMS). The standard provides organizations with management strategies to increase energy efficiency, reduce costs and improve energy performance.

SIA's ISO 50001 Certification demonstrates the company's commitment to continual improvement in the area of energy conservation and its environmental leadership in the auto industry. SIA was also the first U.S. car manufacturing plant to achieve the ISO 9001 Quality Management Certification and the first to achieve the ISO 14001 Environmental Management Certification.

About SIA
Subaru of Indiana Automotive, Inc. (SIA), a subsidiary of Fuji Heavy Industries, Ltd., is the home of North American Subaru production. Models built at the plant include the Subaru Legacy, Outback and Tribeca. In 2007, SIA also began producing the Toyota Camry under contract with Toyota. SIA employs over 3,600 Associates, and every SIA Associate is committed to quality, safety and environmental stewardship. For more information, visit www.subaru-sia.com .

About DEKRA
DEKRA SE is one of the world's leading expert organizations. The company currently runs activities in more than 50 countries. Around 28,000 employees are committed to ensuring long-term safety, quality and environmental protection. The DEKRA Business Units "Automotive", "Industrial" and "Personnel" provide professional and innovative services in the fields of vehicle testing, expert appraisals, international claims management, consulting, industrial testing, product testing, certification, environmental protection, qualification as well as temporary work. In 2011 DEKRA generated sales totaling around 2 billion Euros.

###

SUBARU

TAB 25

SAINT-GOBAIN CONTAINERS

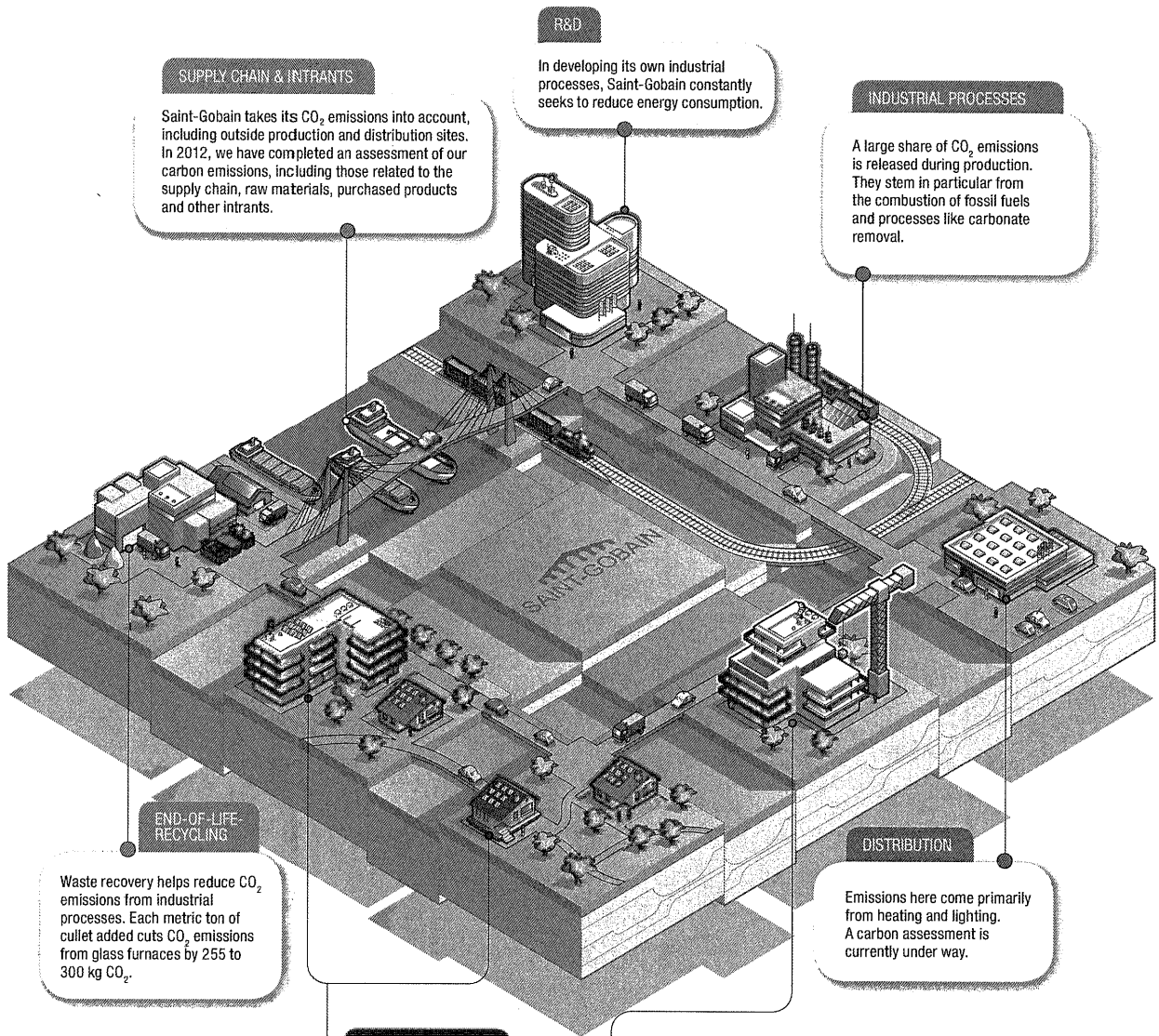
SAINT-GOBAIN

BUILDING OUR ENVIRONMENT TOGETHER

SUSTAINABLE DEVELOPMENT
REPORT **2012**

CLIMATE CHANGE

The issues of climate change and energy use are among the biggest challenges our planet will face in the decades ahead. It's up to us to integrate these challenges in our strategy and in the way we manage our sites and buildings on a daily basis.



Industrial Consumers 163

UNDERSTANDING OUR CO_2 EMISSIONS

Producing and distributing products and services generates greenhouse gasses all along the value chain (see diagram). To gain a better understanding of our emissions, we launched the Saint-Gobain Carbon Assessment in 2011, as CO_2 is the main greenhouse gas emitted by our activities (a review of our greenhouse gas emissions shows that emissions of gasses other than CO_2 are negligible). Thirty-one Saint-Gobain companies in France, representing 75% of the Group's total workforce, completed the assessment in 2012, taking into account emissions from energy use, processes, shipping, commuting and business travel and raw materials purchasing. On the basis of this assessment, action plans will be deployed in 2013 to reduce greenhouse gas emissions from our operations across the value chain. The assessment tool and analysis method used in France are currently being translated for use throughout the Group, both in France and internationally.

COMMUNICATING IN A TRANSPARENT MANNER

We have participated in the Carbon Disclosure Project (CDP) since 2003. The benchmark CDP questionnaire encourages businesses to provide information on their approach to climate change in a transparent manner. In 2012, Saint-Gobain was included in the Carbon Disclosure Leadership Index for the third year in a row. Each year, this index lists the most transparent companies among the world's 500 largest corporations on the basis of their disclosure scores.

REDUCING OUR ENERGY CONSUMPTION

Energy efficiency

Energy efficiency is a key component in our sites' environmental and financial performance. We are making advances in this area by optimizing existing equipment. This means improving combustion processes, making refractories more effective, recovering heat from furnaces and driers and replacing end of life equipment. In addition, we are developing energy management systems and energy audits at our sites. The deployment of World Class Manufacturing (WCM), a comprehensive management system designed to improve company performance by eliminating losses, is also driving progress.

A substantial part of the Group's research and development is devoted to enhancing production processes with the goal of reducing atmospheric emissions. Since 2000, the amount of energy used by our flat glass furnaces has decreased by 10% for equivalent cullet[10] input.

Recycling

The use of secondary raw materials in our processes considerably reduces our energy bill. For the moment, this practice is primarily held back by technical constraints and the availability of quality materials in a tight market. To give an example of the role recycling can play, for each 10% of cullet added to a glass batch, 2.5% to 3% of melting energy is saved.

New energies

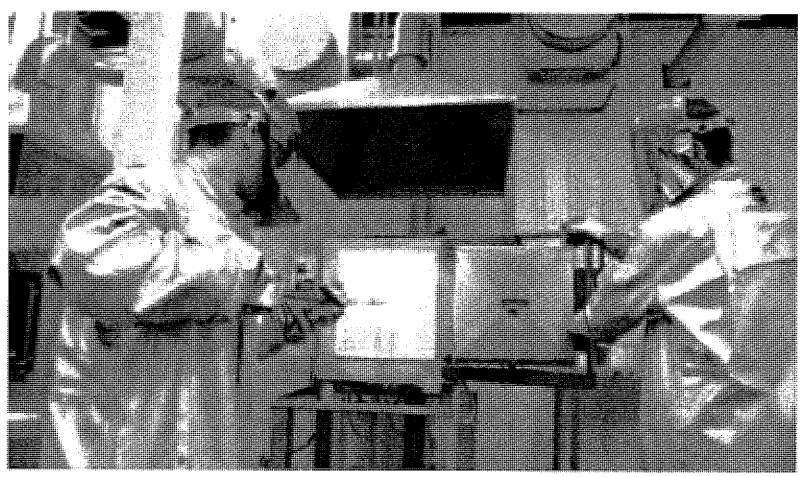
To reduce our greenhouse gas emissions, we are developing manufacturing projects that use biomass as an energy source (charcoal for cast iron in Brazil, biogas in Finland, etc.). A number of pilot tests are underway.

2012 Results

In 2012, concerned sites[9] emitted 11.1 million metric tons of CO_2 based on 2010 output, for a reduction of 3.3% in relation to 2010.

2013 Objective

Reduce direct CO_2 emissions by 6% by end-2013 based on 2010 performance for concerned sites.



A substantial part of the Group's research and development is devoted to enhancing production processes.

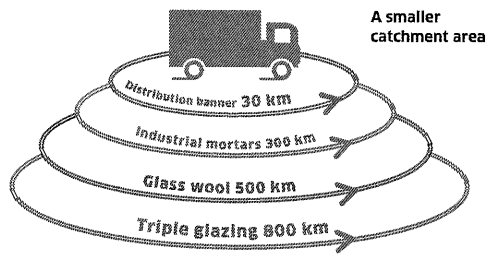
[9] The scope includes sites concerned by the three-year objectives. It represents, for example, around 90% of the Group's water withdrawals (excluding the Building Distribution Sector). Sites at which production levels declined by at least 30% from 2010 were excluded from the calculation based on 2010 performance (see page 82).

[10] Broken glass from production waste, sorted waste or recycling containers.

RE-THINKING OUR TRANSPORTATION OPTIONS

The carbon assessment indicates that transportation accounts for a non-negligible portion of our indirect emissions at the various stages of the product manufacturing and distribution process. Transferring raw materials to the plant, transporting certain products to a second site for additional processing and delivering finished products to the distribution outlet all generate emissions. This is one of the reasons why we choose to locate our industrial and sales facilities as close to customers as possible.

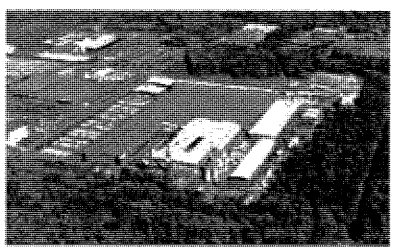
Alternatives to road haulage are used by Building Distribution brands, as well as by other Group Sectors. For example, some 38% of Saint-Gobain PAM products are shipped to their destination entirely via sea, river and/or rail links. Point.P intends to publish a white paper on eco-transportation in 2013.



FOCUS

HEAT RECOVERY

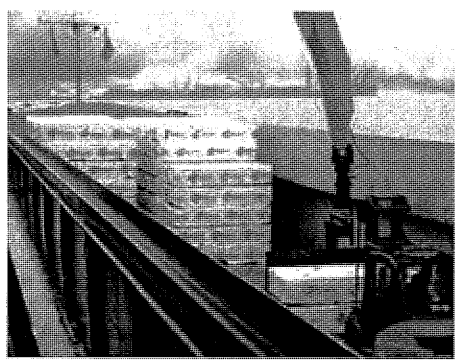
Veralia Deutschland intends to start supplying the Neuburg municipal heating network with recovered process heat from its plant in 2013. In addition, the company has initiated a project to find ways to use renewable energy sources, such as biogas, in its glass furnaces. Tests at the Bad Wurzach plant indicate that, under certain conditions, these types of energies could be substituted for around 10% of the energy mix for glass furnaces.



FOCUS

RIVER TRANSPORTATION FOR PLASTERBOARD

In 2012, Saint-Gobain Construction Products Belgium made several Gyproc plasterboard deliveries by ship from its Kallo site in northern Belgium. A total of 2,200 metric tons of plasterboard was transported by this method, resulting in lower CO_2 emissions and fewer trucks on the road.



Improvements through innovation

Saint-Gobain has focused on reducing its energy use for many years. One of our major strategic research programs concerns the energy efficiency and environmental impact of our processes. The program covers several Activities, including Pipes, Flat Glass and Insulation (both of which use glass furnaces) and Packaging.

2012 was shaped by significant progress in improving combustion methods in our glass furnaces, a nearly 20% reduction in the energy used in our TEL process for producing mineral wool fibers and optimized drying in a number of our plasterboard plants.

Advanced research

Group researchers are using their skills to create more efficient shipping processes for Saint-Gobain materials and to reduce the related environmental impact. A team specialized in applied mathematics and based at the Aubervilliers research center is developing innovative models for the manufacturing Activities (Saint-Gobain Weber, Saint-Gobain ISOVER and Saint-Gobain Glass), as well as for the distribution Activities (Autover and Point.P), where logistics is of key importance.

MAKING OUR BUILDINGS MORE ENERGY EFFICIENT THROUGH THE CARE:4® PROGRAM

CARE:4

In line with our strategic vision, we are committed to making our own buildings more energy efficient. Launched in 2008, our CARE:4® (Company Actions for the Reduction of Energy by 4) program calls for a fourfold reduction in overall energy consumption and greenhouse gas emissions in our office buildings by 2040.
In 2012, the Delegations finished inventorying their buildings in the industrial sector. They will complete the evaluation for Building Distribution sites by the end of first quarter 2013. The inventory includes 8,000 buildings. A description of the geometric characteristics, envelope, heating, air conditioning and other comfort-related equipment has been prepared for 1,500 of them. Based on this inventory, an analysis was carried out to map building energy consumption. For each Activity, this analysis will be used to define action plans to improve buildings' energy performance.
CARE:4® covers all heated or air-conditioned administrative and services buildings owned by Saint-Gobain. This includes offices, sales outlets, training and product demonstration centers and research centers.
The program was first applied to new buildings as from 2008, setting a performance target aligned with the best local energy consumption standard[11]. In 2011, CARE:4® was extended to renovation projects.

OBJECTIVE:
achieve a **fourfold** reduction in overall energy consumption and greenhouse gas emissions at our office buildings by 2040.

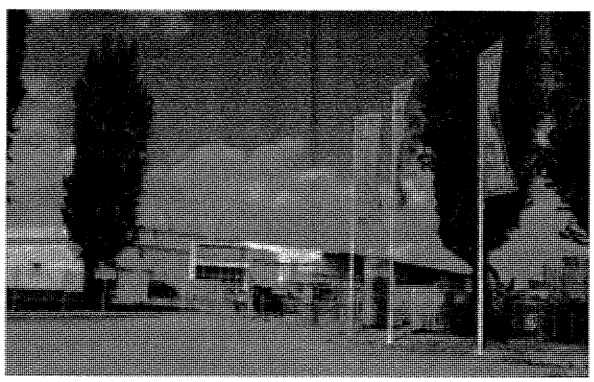
14
CARE:4® certified buildings
as of end-2012

7 **certified**
during the year

FRANCE

Eco-construction

The Point.P group has launched an eco-construction approach for its new buildings. "*The CARE:4® program helped speed things along*," noted Michel Daniel, Vice President Real Estate Assets, Environment and Risk Prevention. Thanks to the expertise acquired since 2011, the Real Estate Assets department guides front-line teams with support from a network of twenty experts.

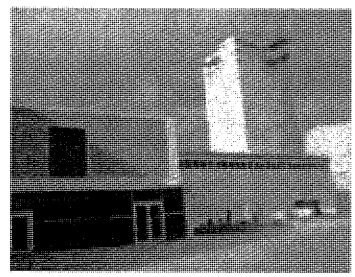


The Point.P sales outlet in Pavillons-sous-Bois, France has received CARE:4® certification.

INTERNATIONAL

Dynamic simulations

In 2012, three Saint-Gobain Weber buildings received CARE:4® certification for projects in Sweden, Turkey and France. Bernard Chauvet, Regional Manufacturing Manager and CARE:4® correspondent, described the certification process:



The administrative building at the Adana plant in Turkey obtained CARE:4® certification in 2012.

"We worked with an engineering firm specialized in energy use to conduct dynamic simulations of buildings in different climatic conditions. With the computer models, we were able to demonstrate that we could meet the CARE:4® objectives. Our experience shows that it is crucial to take the standard into account from the very beginning of a project. CARE:4® is also a useful tool for promoting Weber solutions to enhance outer building envelope quality."

[11] *In any case, new building energy consumption is capped at 80 kWh of primary energy per square meter per year in temperate climates and 120 kWh of primary energy per square meter per year in extreme climates for all comfort-related energy use.*

News Item

EPA Recognizes Saint-Gobain's Leadership in Energy Conservation with ENERGY STAR Award for Sixth Consecutive Year; Fourth Year at Sustained Excellence Level

ENERGY STAR recognition helps building materials manufacturer gain a competitive business advantage and set precedent for future.

VALLEY FORGE, PA, Apr 3, 2014

< Return to News Releases

Saint-Gobain, the world's largest building materials company, announces it has been awarded the ENERGY STAR® Partner of the Year Sustained Excellence Award by the U.S. Environmental Protection Agency (EPA) for the fourth consecutive year. The award recognizes Saint-Gobain's outstanding leadership in energy management and reductions in greenhouse gas emissions through energy efficiency. Saint-Gobain is the first and only manufacturer of glass containers or fiberglass insulation ever to receive the award.

"At Saint-Gobain, we strive to be a good example of a 21st century manufacturing business by practicing and consistently working to reduce our energy usage at our more than 130 plants throughout North America," said John Crowe, President and CEO of Saint-Gobain and its North American construction materials subsidiary, CertainTeed Corporation. "As a company that manufactures products that help consumers live more energy-efficient, comfortable and healthy lives, it's important to us that the process in which we make these products reflects our end goal."

The 2014 Partner of the Year - Sustained Excellence Award winners are selected from the 16,000 organizations that participate in the ENERGY STAR program. The award is given to a select group of organizations that have exhibited outstanding leadership year after year. These winners have reduced greenhouse gas emissions by setting and achieving aggressive goals and employing innovative energy-efficiency approaches.

This is the sixth consecutive year that Saint-Gobain and its North American subsidiaries have been recognized by the EPA with an ENERGY STAR Award. Saint-Gobain was first awarded the ENERGY STAR Partner of the Year Award in 2009 and 2010, and then attained the prestigious level of Sustained Excellence in 2011, 2012, 2013 and 2014. Saint-Gobain's accomplishments and long-term commitment to energy efficiency will be recognized at an EPA awards ceremony in Washington, D.C., on April 29.

"Saint-Gobain has earned EPA's highest ENERGY STAR award – the 2014 Partner of the Year – Sustained Excellence Award – because of their unwavering commitment to helping consumers become increasingly more energy efficient," said Bob Perciasepe, Deputy Administrator, U.S. Environmental Protection Agency.

The EPA is recognizing Saint-Gobain for its leadership in implementing a wide range of process improvements and energy management practices over several years. Since 2008, the company has improved energy intensity by 17 percent. In 2013, Saint-Gobain businesses in North America were able to reduce their energy intensity (the amount of energy used to produce a unit of product) by 2.1 percent – equivalent to the amount of energy required to produce approximately 488 million typical glass containers or the energy required to make enough shingles for new roofs on over 700,000 typical houses or the energy used to provide insulation for about 100,000 typical homes. In addition, the energy savings achieved by the Company equate to avoiding more than 70,957 metric tons of carbon dioxide emissions last year.

"We are deeply honored to be recognized by ENERGY STAR for our contributions for the sixth year in a row," continued Crowe. "This recognition represents the impact made by all of our family of companies in North America consisting of more than 19,000 employees and serves as a reminder of what we can accomplish when we work together to continually improve our practices and the products we manufacture to ultimately help create a more energy-efficient future for all."

Editor's Note: For two infographics detailing Saint-Gobain's energy savings, please visit http://bit.ly/1lzNMdZ and http://bit.ly/OaItmC (Please credit Saint-Gobain).

About Saint-Gobain in North America

Saint-Gobain, the world's largest building materials company, has its North American headquarters in Valley Forge, Pennsylvania. As the world leader in sustainable habitat, Saint-Gobain is committed to inventing solutions to help professionals and communities around the world build and renovate comfortable, healthy, economical and energy-efficient buildings. The company has more than 265 locations in North America and approximately 19,000 employees. In the United States and Canada, Saint-Gobain reported sales of approximately $7.9 billion in 2013.

Recognized as a 2009 and 2010 ENERGY STAR Partner of the Year by the U.S. Environmental Protection Agency, Saint-Gobain earned the 2011, 2012, 2013 and 2014 ENERGY STAR Sustained Excellence Award, the highest level of recognition for outstanding contributions to protecting the environment through energy efficiency. For more information about Saint-Gobain in North America, connect with the company on Facebook and Twitter.

About Saint-Gobain
Saint-Gobain, the world leader in the habitat and construction markets, designs, manufactures and distributes building materials, providing innovative solutions to the challenges of growth, energy efficiency and environmental protection. With 2013 sales of $55.8 billion, Saint-Gobain operates in 64 countries and has approximately 187,000 employees.

About ENERGY STAR
ENERGY STAR was introduced by the U.S. Environmental Protection Agency in 1992 as a voluntary market-based partnership to reduce greenhouse gas emissions through increased energy efficiency. Today, ENERGY STAR offers businesses and consumers energy-efficient solutions to save energy, money, and help protect the environment for future generations. 16,000 organizations are ENERGY STAR partners committed to improving the energy efficiency of products, homes, and buildings. For more information about ENERGY STAR, visit www.energystar.gov or call toll-free 1-888-STAR-YES (1-888-782-7937).

Press Contacts:
Saint-Gobain in North America:
Dina Silver Pokedoff, APR
610-341-7031 (office)
484-919-2103 (mobile)
dina.pokedoff@saint-gobain.com

Brownstein Group for Saint-Gobain in North America:
Nicole Gainer
267-238-4147 (office)
856-266-1707 (mobile)
ngainer@brownsteingroup.com

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Raytheon Company | *Waltham, Massachusetts*

Raytheon

Raytheon Company is a technology and innovation leader specializing in defense, security, and civil markets throughout the world. Raytheon provides state-of-the-art electronics, mission systems integration, and other capabilities in the areas of sensing; effects; and command, control, communications, and intelligence systems; as well as a broad range of mission support services. Raytheon has been measuring, reporting, and reducing its energy consumption and greenhouse gas emissions for more than a decade. Raytheon is receiving ENERGY STAR Partner of the Year—Sustained Excellence recognition for continuing its progress in employee engagement and leadership in energy management in the New England area. Key 2013 accomplishments include:

- Reducing absolute energy consumption by 0.2 percent over the past year and absolute energy consumption by more than 11 percent since 2008. The company achieved its 2008–2015 energy reduction goal of 10 percent two years ahead of schedule, and greenhouse gas emissions have improved by 34 percent since 2002.
- Assisting customers, suppliers, and contractors in reducing operating costs and carbon footprints.
- Collaborating with EPA and ENERGY STAR industrial partners to host a utility-sponsored regional energy workshop to share best practices and resources with existing and prospective ENERGY STAR partners located in New England.
- Presenting to over 1,700 people in industry and federal, state, and local organizations on Raytheon's sustainability program and ENERGY STAR tools and resources.
- Completing hundreds of energy projects with estimated annual savings of over two million kWh.

Saint-Gobain | *Valley Forge, Pennsylvania*

SAINT-GOBAIN

Saint-Gobain manufactures a range of building products, high-performance materials, and glass containers at more than 130 plants throughout North America. The company also distributes building materials through 120 outlets in the United States. Saint-Gobain businesses include ADFORS, CertainTeed, Norandex Building Materials Distribution, Meyer Decorative Surfaces, Saint-Gobain Abrasives, Saint-Gobain Ceramic Materials, Saint-Gobain Crystals, Saint-Gobain Performance Plastics, and Verallia North America. Saint-Gobain is receiving ENERGY STAR Partner of the Year—Sustained Excellence recognition for sustained growth and continuous improvement of energy management across its operations. Key 2013 accomplishments include:

- Reducing energy intensity by two percent, an amount equivalent to the energy required to produce insulation for about 100,000 typical homes. Since 2008, the company has improved energy intensity by 17 percent.
- Ensuring the continuity of the corporate energy program by quickly promoting a divisional energy champion to replace the long-standing energy manager who transferred from the company. As a result, the energy program made a smooth transition and energy performance continued to improve.
- Championing ENERGY STAR throughout the United States as a proven resource for industrial energy efficiency among manufacturing communities, state energy offices, schools, and other audiences.
- Expanding the Saint-Gobain energy culture beyond internal operations and engineering to integrate suppliers through a supplier charter and responsible purchasing programs. Saint-Gobain performs third-party verifications and audits of compliance with the charter.
- Earning two new ENERGY STAR certifications for glass container plants in 2013, bringing the total number of plants achieving certifications since 2010 to seven. To date, Verallia North America is the only glass producer in the United States to achieve ENERGY STAR certification.

TAB 26

PRAXAIR, INC.

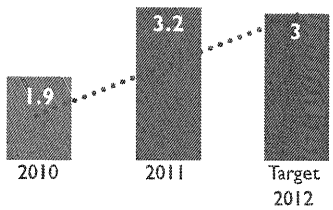
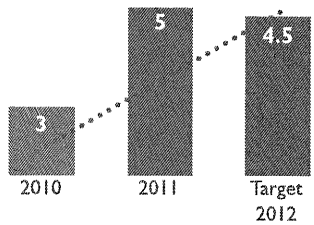
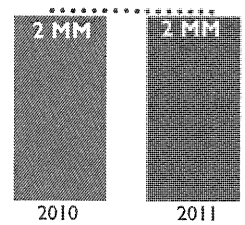
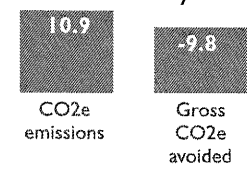
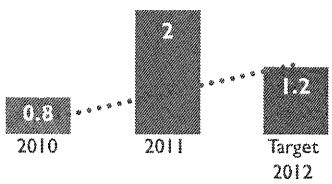
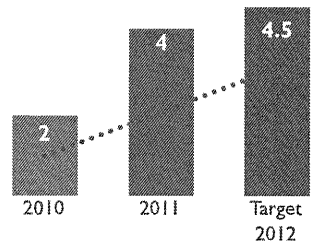
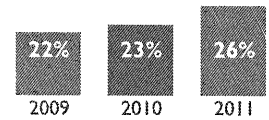
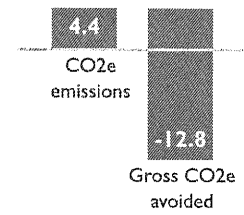
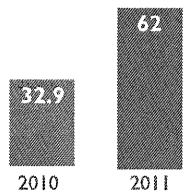
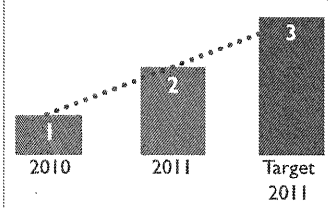
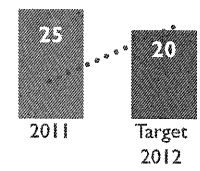
2012 Sustainable Development Report

PRAXAIR

Making our planet more productive

Industrial Consumers 171

Chart 1.1 (1) Praxair GHG Goals and Results vs. Target

	Improve GHG intensity (emissions per unit)		Enable customer carbon productivity	
Goals	Improve GHG intensity of manufacturing operations	Integrate GHG management across business	Innovate to meet market risks & opportunities	Communicate carbon reductions from use of Praxair products and applications
Targets	Air Separation Units (ASUs): 1% annual intensity improvement Hydrogen Plants: 4% intensity improvement by 2020 vs. 2009 baseline (0.4% per year)	Distribution: 1.5% annual emissions intensity improvement per product delivered Capital Projects: An average of at least 1% annual energy intensity improvement for ASU plants in our design portfolio Eco-Productivity: Document environmental savings from productivity Offices: 20% reduction in emissions by 2012	Innovation: Projects in R&D pipeline should annually avoid 2 million metric tons (MT) CO_2e when commercialized Report eco-portfolio: Percent of revenue from applications that bring environmental advantage Work with customers & regulators to develop green technologies	Carbon Productivity: Measure and validate carbon productivity for selected Praxair products and applications
Results	ASUs Percentage Improvement vs. 2009  • • • Target (1% improvement/year)	Bulk Distribution  • • • Target (1.5% improvement/year)	Innovation  • • • Target (2MM MT CO_2e avoided /year when applications are commercialized)	Carbon Productivity: O_2 & Kr  Oxygen used to make steel enables 8.7 million MT CO_2e to be avoided. Krypton used for thermal insulation enables 1.1 million MT CO_2e to be avoided. These two applications avoid almost as much CO_2e as is emitted from all Praxair air separation activity.
	H2 Plants Percentage Improvement vs. 2009  • • • Target (4% improvement by 2020)	Packaged Gas Distribution  • • • Target (1.5% improvement/year)	Eco-Portfolio  Percent of revenue from applications that bring environmental advantage	Carbon Productivity: H2  Hydrogen used to make ultra-low sulfur diesel and driven with a diesel particulate filter results in nearly three times more GHG avoided than is emitted in all of Praxair's H2 production.
	Cost-Savings from Eco-Productivity  Target: Increase reported environmental savings within productivity	Capital Projects Percentage Improvement vs. 2009  • • • Target (1% energy efficiency improvement/year for ASUs in design portfolio)	Offices Percentage Improvement vs. 2009  • • • Target (20% reduction in emissions by 2012)	

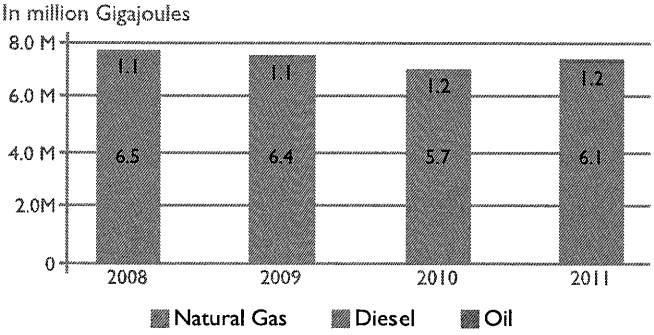
Environment

Energy

EN3 Direct energy consumption

Praxair's total direct energy consumption in 2011 was 2,000,000 MWh (7,400,000 GJ). Praxair rigorously manages direct energy consumption both in terms of price and quantity used. See Chart EN3 (1).

Chart EN3 (1): Total Direct Energy Consumption
In million Gigajoules

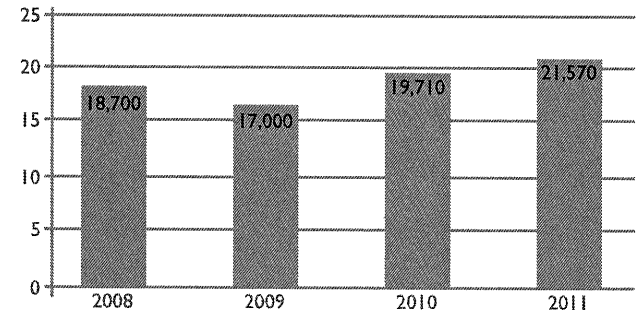


EN4 Indirect energy consumption

Total indirect non-renewable energy consumed in 2011 was approximately 21,000,000 MWh (76,000,000 GJ). Indirect renewable energy (hydropower) was 360,000 MWh (1,300,000 GJ).

Energy use is one of Praxair's largest expenses and is rigorously managed both in terms of price and quantity used. Nevertheless, energy use will increase with business growth because energy is the most significant input cost to produce atmospheric products. Praxair therefore has an annual target to improve energy intensity (per metric ton of product produced) from ASUs by one percent. In 2011, this target was exceeded as the company achieved 1.3 percent improvement over 2010 (3.2 percent versus the 2009 baseline). Praxair does not use primary energy to generate intermediate energy.

Chart EN4 (1): Indirect Energy Consumption
In thousands of MWh



Renewable Energy

Praxair procures 14.8% of energy from renewable sources, mainly hydro in New York state and in Brazil. Other than that, renewable energy is purchased as part of the energy mix from Praxair's energy utility providers. This is reflected in the different GHG emissions factors attributed to our energy use in EN16. As these providers come under increasing regulatory pressure to include more non-fossil-fuel sources in their energy mix, more renewable energy sources will be brought into Praxair's mix.

Praxair has concluded that, at its demonstrated energy and financial rate of return from energy-efficiency projects, facility energy efficiency projects are the best investment we can make to improve Praxair's global energy footprint and reduce natural resource consumption [Chart 1.2 (3)]. Renewable energy is a revenue driver for Praxair, and the company provides multiple industrial gas applications for our customers in this industry. See Boxes EN 6 (1),

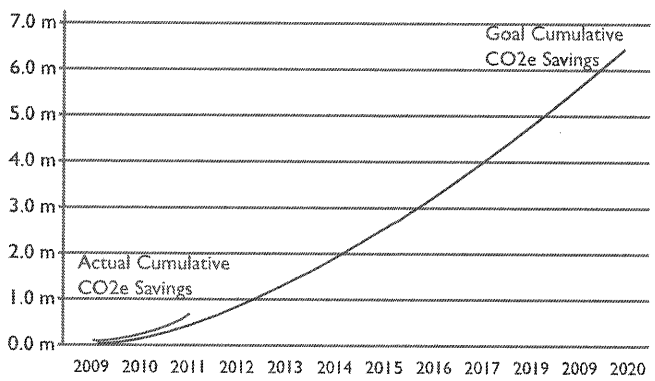
Environment

EN5 Energy saved due to conservation and efficiency improvements

Praxair is vigilant at managing its energy footprint and has a range of initiatives to reduce operational energy consumption. Praxair's energy efficiency target is designed to show the link between energy cost management and margin improvement: Energy savings of over 300,000 MWh were achieved in 2011, equivalent to more than 150,000 metric tons of GHG emissions. By the end of 2012, Praxair expects to see $1 billion in energy cost savings over the 20-year period since 1992.

Praxair has the following energy goal: From 2009 to 2020, achieve a minimum energy savings of 1.8 million MWh of electricity and 2.5 million MMBtu of natural gas, delivering anticipated savings to the company of more than $100 million by the end of the goal period. This is equivalent to a cumulative GHG savings of over six million MT. As Chart EN5 (1) shows, we are ahead of our target in this area.

Chart EN5 (1): Cumulative CO2e Savings from Energy Efficiency Actual and Forecasted
Power and Gas



Box EN5 (1): Optimizing energy use by upgrading machinery

Praxair invested in a productivity program to design and test a new liquefier turbine/booster unit to provide at least 150 kW power savings per installation (10 total opportunity locations). Approximately $100,000 was invested in the pilot project at Inver Grove, Minn., which resulted in more than two million KWh energy avoided per year (i.e., more than two kW demand was reduced per $1,000 invested). The full-year savings and reduced energy demand exceeded 2 million kWh (1,400 MT CO2e), equivalent to annual CO2e emissions from electricity use at 170 homes (using the EPA GHG calculator). As this equipment is used in multiple operating plants worldwide, the development cost can be spread over the entire fleet. This helps drive down payback periods for individual projects and improve overall energy savings.

BOX EN5 (2): Praxair sustainability partnerships

Praxair's North American Industrial Gases (NAIG) Ontario, Calif., hydrogen facility received a substantial payment from Southern California Edison for its participation in the utility's energy-reduction incentive program. To reduce energy consumption and earn its incentive payment under the program, the Ontario facility upgraded to an oil-free compressor system. NAIG's Wilmington, Calif., air separation facility has now benefited similarly, after significantly reducing electricity consumption through its participation in the Los Angeles' Department of Water and Power's (LADWP) incentive program. The Wilmington team not only upgraded compressor systems, it also replaced a molecular sieve and made other related process modifications. The project resulted in the facility receiving a "check" for 18,371,000 kWh from LADWP directors to the "LADWP-Praxair Sustainability Partnership."

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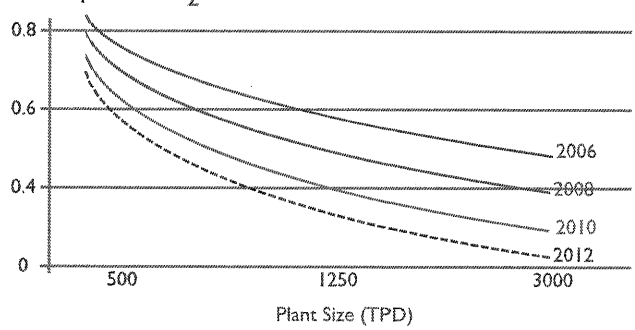
EN6 Initiatives to provide energy-efficient or renewable energy-based products and services, and reductions in energy requirements as a result of these initiatives

Praxair provides applications that improve energy efficiency and enable the production of renewable energy products and services. Our core business frequently provides products to customers at a lower energy cost than our customers can achieve on their own. In 2011, we showed that the energy saved as a result of using our oxygen to improve the combustion process to make steel exceeds the energy used in all of our air separation processes (around nine million MT CO2e). In 2012, Praxair showed that the use of our krypton as an insulating gas between thermal window panes allows customers to avoid one million MT CO2e. For more information on the research and assumptions, see Praxair's white papers on *green technologies* on our website.

Chart EN6 (1): Energy Efficient Design Improves Product Energy Intensity Oxygen Cost Index

Dollars per ton O_2



Praxair invests in facility designs that improve product energy intensity. Power efficiency designed into new plants improves the energy intensity of the products manufactured in those plants. Chart EN6(1) shows that new plants will achieve an annual power reduction of 14MW by the end of 2012–enough to power 1,500 U.S. homes annually. By 2016, this figure is expected to exceed 25 MW, resulting in a cumulative 50 MW reduction in 2012 and 80 MW by 2015. This also results in a 30 percent improvement in the Oxygen Cost Index (the energy cost of producing a ton of oxygen).

In addition, Praxair offers products and applications to the market that support energy-efficient and renewable energy solutions. Industrial gases are crucial to the production of second-generation biofuels and alternative fuels.

Box EN6 (1): Hydrogenated Jet Fuel (HRJ) for commercial flight

In 2011, Praxair provided hydrogen for a KLM flight from Paris to Amsterdam, the first commercial flight to be powered with a 50/50 mixture of renewable and conventional jet fuel. The fuel is produced by Dynamic Fuels, a joint venture between Syntroleum Corp. and Tyson Foods. Hydrogenated jet fuel (HRJ) is created by mixing hydrogen with non-foodgrade animal fats, greases and vegetable oils. HRJ has a low freezing point and can withstand freezing temperatures at high altitudes. Praxair worked with Dynamic Fuels to develop the product. Currently, Dynamic Fuels now produces more than 4 million gallons per month of cleaner and renewable diesel, jet and other fuel products.

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EN7 Initiatives to reduce indirect energy consumption and reductions achieved

Praxair's energy efficiency program is an important part of our operational DNA and a crucial element of margin creation. These results are achieved by continuous investment in energy-efficient projects throughout Praxair. See Boxes EN5 (1), EN5 (2) and EN7 (1).

We report GHG emissions from materials (steel and office paper) and air travel in EN17. Subcontracted production is not a major activity for Praxair. Transport is a key environmental issue for Praxair (see EN29). Employee commuting is an insignificant contributor to our overall environmental or GHG footprint. Several offices, as part of their general support of Praxair's green initiatives, promote carpooling.

Box EN7 (1): Minimizing energy use with compressor upgrade

In Hatfield, Penn., Praxair upgraded a nitrogen recycle compressor on an air separation plant to improve efficiency. The upgrade included the aerodynamic redesign of impellers, an upgrade of mechanical seals to reduce losses and the replacement of other compressor and gearbox internals. For an investment of less than $1 million, the project resulted in more than three million kWh of energy use avoided. Project full-year savings were approximately 0.5 KW demand reduction per $1,000 invested (2,000MT CO2e avoided per year), equivalent to annual CO2e emissions from the electricity use of 260 homes. As this equipment is used in multiple global operating plants, the development cost can be spread over multiple projects. This helps to drive down the payback periods for an individual project, and improves overall energy savings.

TAB 27

INDIANA CAST METALS ASSOCIATION

Accurate Castings Inc. Major Electric Energy Saving Projects - (May 27, 2014)
Exclusive of Utility Rebate Programs

• Demand Control

The two foundries, Accurate Castings and Kingsbury Castings Division, are electric intensive companies with the vast majority of energy being used by induction melting furnaces to melt solid metal into a molten 2800 degree bath. For over 25 years the foundries have used 'demand control' hardware and software to allow the ability to precisely control how much power is used, when it is used, and where it is used. The equipment lets the foundry target the desired kW demand during both 'on-peak' hours and 'off-peak' hours. The demand controller can quickly adjust the induction melting furnaces based upon real time substation pulse counts. Effectively, this flattens the demand profile to lower levels, meets the utility's 'on-peak' system needs, and reduces the amount of energy that can be consumed. The original mid-1980's demand control system at the two foundries went through several iterations and upgrades as technology improved over the years. The main purpose of the 'demand control' system has been to lower kW demand, but kW-hr energy usage reduction has been a byproduct of the 'demand control'. The amount of energy not available for consumption during 'on-peak' hours equates to 2,625,000 kW-hr per year at Kingsbury Castings and 1,650,000 kW-hr per year at Accurate Castings. Kingsbury has spent more than $90,000 in the past 15 years on demand control, and Accurate has spent over $60,000 in the past 15 years on demand control. A utility rebate was not provided.

• Furnace Design

Kingsbury Castings melting furnaces consume electricity through primary isolated, dedicated external transformers which, according to the manufacturer Inductotherm, allow approximately 2% energy savings per year, (150,000 kW-hr per year). In the past 15 years, Kingsbury Castings has spent over $235,000 creating a substation for those primary isolation transformers and also on the maintenance and replacement of that equipment. A utility rebate was not provided.

Accurate Castings upgraded melting furnaces in 2008 for $804,000. Several engineered design options allowed the foundry to realize energy savings. One such power supply feature is IGBT technology that replaced older SCR modules. Conservatively, IGBT improvements save 0.5% energy which equates to 25,000 kW-hr per year. .... Additional design changes to the new furnaces and power supplies let Accurate Castings switch melting methods from the 'heal method' to the 'batch method'. According to the manufacturer Inductotherm, this change produces a 7% energy reduction which equates to a 325,000 kW-hr savings per year. A utility rebate was not provided.

• Lighting Upgrades:

Precision Processes Division, the centralized casting finishing and shipping facility, upgraded facility lighting from metal halides to fluorescents in 2009. $49,000 was spent with an estimated benefit of 150,000 kW-hr saved per year. A utility rebate was not provided.

Accurate Castings upgraded facility lighting from metal halides to fluorescents in 2011 for a cost of $65,000. An estimated 295,000 kW-hr per year were calculated to be saved. A utility rebate was not provided.

• VFD Air Compressors:

Kingsbury Castings Division, in 2007, spent $126,000 to upgrade air compressor systems from a standard 150 hp drive compressor with a 100 hp trim to a single 200 hp vfd (Variable Frequency Drive). The new vfd compressor runs at approximately 80% capacity and makes the trim compressor no longer necessary, saving 90 hp overall. Due to a malfunction in the equipment another $66,000 was spent in 2014 to replace the compressor. Combined cost is $192,000. Combined annual system savings are approximately 335,000 kW-hr per year. A utility rebate was not provided.

Precision Processes Division, in 2008, spent $76,000 upgrading air compressor systems from 50 hp to 75 hp. The new compressor runs about 50% capacity. Taking the 12.5 hp drop in energy usage, approximately 45,000 kW-hr per year are saved. A utility rebate was not provided.

	Accurate Castings		Kingsbury Castings		Precision Processes	
	Dollars	**kW-hr saved**	**Dollars**	**kW-hr saved**	**Dollars**	**kW-hr saved**
Demand Control	$60,000	1,650,000	$90,000	2,625,000	N/A	N/A
Furnace Design	$804,000	350,000	$235,000	150,000	N/A	N/A
Lighting Upgrades	$65,000	295,000	Nipsco Rebate	Nipsco Rebate	$49,000	150,000
VFD Air Compressors	Nipsco Rebate	Nipsco Rebate	$192,000	335,000	$76,000	45,000
Total	$929,000	2,295,000	$517,000	3,110,000	$125,000	195,000

The total combined for all three facilities is: $1,571,000 spent for 4,260,000 kW-hr saved.

Dalton Corporation, Warsaw, IN
Submitted by Ron Schmucker, VP, General Manager

Below are some of the items we have implemented related to energy efficiency,

1. On our 12,500 VAC secondary feeding our 13 plant substations we installed a power factor correction unit February 2012. This has improved our On-peak power factor from .89 to .99 and also on the "Off-peak" power factor from .87 to .99 which when we tested by turning the unit on and off we saw a 100 KW drop at 8,800 KW demand.

2. We installed a variable frequency drive on our Emission Control Fan in August 2010 which is our largest motor in our facility at 480_vac 800_HP. We are able to start the motor and our in-rush current never exceeds 800 _amp where before our in-rush current would run 3,400_amp for 45 seconds. We also are able to modulate the frequency of the motor while on "spill" going from 400 amps to 150 amps for a reduction of 250 amps. We are on "spill" approximately 50% of our "Off-peak" time or 18 hours a day.

3. We have converted 80 400 watt metal Halide Lights to High Efficient Fluorescent Lights with Motion Detection Sensor. The metal Halide Lights consume approximately 158,000 KW-Hours each year while the High Efficient Fluorescent Lights use 63,900 KW-hours each year which does not account for the savings from the motion detector also shutting the lights off when not needed. We completed this in December 2013 and was part of the Energize Indiana program.

4. Compressor Variable Output controls and Compressor Automation we completed December 2013 and we are part of the NIPSCO/Franklin Energy Program. We removed two 350_HP compressors and installed two new Quincy 350_HP compressors with a variable output scroll allowing the compressor to operate from 50 to 100% of performance with very quick response. We also are one of the largest companies to install Quincy's NetSync compressor automation system basically controlling the plant compressed air pressure by loading and unloading compressors automatically to support the plant demand. From monitoring our compressor power prior and since the finishing we are seeing approximately 100,000 reduction in KW hours per month.

5. We are in process of installing a central compressor water cooling tower system. We have 7 compressors which are non-contact water cooled and we are currently single pass water so the water comes in from the city supply and then goes through the compressor heat exchangers and then down the drain. We are installing a central pumping station to pump cooled water to the compressors and then return the water to a cooling tower to prepare it to be recirculated back to the compressors. This will also resolve some other issues chemically for us. We expect to reduce our municipal water consumption by 440,000 gallons per day.

6. One of our Inductor furnace's we are currently upgrading the power supply. The original 1960's power supply is being upgraded to today's power supply technology allowing for more precise power control and power factor utilization.

7. As a general rule we typically only use premium efficiency motors and install inverters on almost any new application so we can have complete control of the motor and reduce it's power when not needed.

Rochester Metal Products, Rochester, IN
Submitted by Doug Smith

1. Replaced a combustion hood on a natural gas fired scrap pre-heater. New burners and controls are more efficient than previous unit.

2. We have done several compressed air studies (at least 3 in the past 10 years). Each time we make modifications and optimize our system for a more energy efficient operation.

3. Installed controlled storage for compressed air system.

4. Improved compressed air distribution piping.

5. We check for compressed air leaks using ultra sound equipment and make repairs to save electricity.

6. When purchasing new electric motors we purchase the highest efficiency available that meets our specifications.

7. We installed a demand control system that controls our monthly peak demand. We have found that controlling our demand not only helps control our monthly demand charge but that we run more efficiently when we force ourselves to run at a steady pace instead of melting at maximum speed and then stopping to wait for the rest of the process to catch up.

8. Prior to the rebate offerings we would replace non-functional fluorescent or metal halide lighting fixtures with new high efficiency fluorescent fixtures.

9. During periods of cold weather we monitor indoor air temperatures and turn down thermostats throughout the plant to conserve natural gas.

10. We have installed additional doorways to create an airlock for most of our overhead doorways for our facility to cut down on drafts and heat loss.

We pay attention to energy efficiency and waste every day. The cost of energy and the competitive business climate demand it.

EXHIBIT B TO THE INDUSTRIAL CONSUMERS' SUBMISSION IN RESPONSE TO GAO 2014-1

INDUSTRIAL CONSUMERS' EXHIBIT B

Introduction

In Exhibit A, the Industrial Consumers have provided broad examples of their energy efficiency efforts. This exhibit highlights the work of the Industrial Consumers, showcasing their efforts as part of their overall commitment to increased energy efficiency and corporate responsibility. This commitment extends scope of energy efficiency beyond a focus only on their production facilities, to include improvements that reduce the energy within the supply chain, waste management, and even transportation of materials. As further reflected in this document, these efforts have generated recognition for the Industrial Consumers from a variety of sources.

I. The Industrial Consumers Make Energy Efficiency a Priority

With the cost of energy a significant input into the overall cost of production, the Industrial Consumers make energy efficiency a priority. They do this through a variety of measures. These measures range from a commitment to reduction in energy use, to the institutional approaches such as the establishment of energy management teams that look for, and implement, energy saving measures. One Industrial Consumer, for instance, has implemented a variety of energy efficiency initiatives, including submetering to track and benchmark performance, development of metrics, conducting audits, establishing a capital fund specifically directed at energy efficiency projects, installing premium efficiency motors, installing high emissivity glass to reduce solar heat gain. In undertaking these, and other efforts, the customer considers not only a payback period, but also established metrics such as the

increase in production, longevity of the improvement, and waste reduction. Other examples of the Industrial Consumers' commitment to energy efficiency include:

- **ALCOA**: from a 2005 baseline, set a goal of a 10% reduction in energy intensity within its Global Primary Products (refining and smelting), by 2020, and a 20% reduction in energy intensity in all other business within the same timeframe. In 2011, ALCOA's Warrick Indiana facility worked with the DOE and Oak Ridge National Laboratories to deploy a "proof of concept" suite of wireless sensors that allowed ALCOA to monitor energy use at various points within the facility, in order to optimize the operation of systems within the facility.
- **Cargill**: set an overall global goal of a 5% improvement in energy efficiency by 2015, and utilizes a "Behavior-based Energy Management" system at some locations, which has helped identify numerous energy saving opportunities. Cargill also manufacturers Envirotemp™ FR3™ transformer coolant fluid, a vegetable oil-based products which replaces petroleum-derived mineral oil and offers greater operating efficiency.
- **Air Liquide**: established a minimum goal of 2% improvement in energy efficiency of its air separation units, hydrogen units, and product deliveries, between 2011 and 2015.
- **Novelis**: set a goal to decrease energy intensity by 39% by 2020 from a FY 2007-2009 average baseline.
- **Marathon Petroleum**: maintains an Energy Efficiency Team which identifies and recommends efficiency opportunities and energy saving measures.
- **BP**: with refining accounting for approximately 36% of the energy consumed by BP, it employs continuous improvement programs to improve plant efficiency, tracking energy performance against the Solomon Energy Intensity Index.

- **Haynes International**: Partnered with TAP to identify and implement energy savings projects that were estimated to result in substantial annual savings in natural gas costs.
- **Ingredion**: uses continuous improvement teams in order to achieve reductions in energy use within its manufacturing facilities.
- **Mead-Johnson**: since 2009, has used landfill gas to provide energy at its Evansville, Indiana plant, while working to meet its GreenVision 2020 goal of a 35% reduction in energy use between 2009 and 2020.
- **Eli Lilly**: conducts energy assessments, and utilizes numerous processes to share best practices companywide including the use of a "Health, Safety and Environmental Governance Structure" that involves participation of teams within every business group with ultimate reporting to the Board of Directors.

II. The Industrial Consumers Invest in Energy Efficiency

The Industrial Consumers have made numerous investments in energy efficiency at their facilities. For example, between 2009 and 2011, one of the Industrial Consumer's invested approximately $2.26M of its own capital to complete 16 energy efficiency projects, with an annual overall energy savings of approximately 10,500,000 kWh. Although evidence of such investments can be seen throughout this document, and Exhibit A, some of the particular investments made by the Industrial Consumers include:

- **Linde Group**: in 2013, The Linde Group identified over 300 projects worldwide to reduce energy consumption, using internal audits and implementing projects with savings potential when technically and economically feasible.

- **Allison Transmission**: has undertaken numerous efficiency projects that reduced its electricity usage by 9% in calendar year 2013.
- **Lehigh Hanson**: in addition to other measures has introduced environmental best practices, improved benchmarking, and audits. The company has a goal of reducing CO_2 emissions by 20% 2020, and its parent corporation, Heidelberg Cement, has announced plans to have all cement plants, worldwide, utilizing environmental management systems based on ISO 14001 certification by 2020; and in 2012, 21.7% of its entire energy consumption came from alternative fuels.
- **Tate & Lyle**: since 2008 the company has reduced energy use per tonne of production by 10% and uses waste to generate energy.
- **Indiana Cast Metal Association**: members of the Indiana Cast Members Association, including Accurate Castings, Inc., Dalton Corporation, and Rochester Metals, have undertaken a wide variety of energy efficiency projects including: implementing demand controls, modifying furnace designs, installing new air compressors, installing VFDs, making lighting improvements, improving power supplies to furnaces, undertaken compressed air studies and made modifications to optimize the systems, conducting air leak testing, and installing additional doorways to create an airlock reduce drafts and heat loss.

III. The Industrial Consumers Consider Energy Efficiency from Multiple Perspectives

The Industrial Consumers recognize that reduction in the amount of energy used as an input in production is a significant step in improving energy efficiency. They also, however, look for creative and innovative ways to reduce reliance on energy produced by utilities, to

reduce the energy used in other areas of their business, and to reduce the energy needed by end use consumers. Examples of efforts by the Industrial Consumers to reduce the use of system resources and to reduce the overall energy use related to their business operations include:

- **ArcelorMittal**: with a cost-matching grant from the DOE, ArcelorMittal made a multi-million dollar investment in a long term project at its Indiana Harbor plant in East Chicago. The project captures blast furnace gas produced at the facility, and uses it to power a new high efficiency boiler that provides steam to an existing turbine system. With the new boiler in place, the company has been able to generate, annually, the estimated equivalent of 330,000 MWH, which is used onsite.
- **Praxair**: produces many products utilized by its customers to improve the overall energy efficiency of their production or reduce the environmental impact of a final product. For example, hydrogen helps in the production of ultra-low sulfur diesel fuel, krypton insulates thermal windows, and oxygen optimizes combustion in steelmaking. In 2012, these three Praxair products helped its customer avoid 34M metric tons of CO_2; while at the same time the company has focused on a 1% annual improvement in the energy intensity of its air separation units, and a 4% intensity improvement by 2020 in its hydrogen plants.
- **US Gypsum**: improved its synthetic gypsum drying process at its Shoals, Indiana facility by reusing waste heat. The company also introduced SHEETROCK® Brand UltraLight Panels that result in a 20% reduction in the energy used to transport the product. The company also offers a LEED Report Tool to consumers that helps them determine how products assist in qualifying a project for LEED credits.

- **Vertellus**: worked with numerous partners, including the EPA, IDEM and IPL to convert an idle property into a 43-acre solar farm near Indianapolis.
- **Toyota**: installed a new abiadatic humidification system in its paint booth at its Indiana facility, which improved energy efficiency by 35%.
- **Air Products**: reduced energy consumption within the IT department at its corporate headquarters by 24%. In addition, the company has engaged in a multi-year demonstration program, using its patented technology, to convert biogas into electricity, heat, and hydrogen. The hydrogen is then supplied to a fueling station to serve hydrogen-fueled vehicles.
- **General Motors**: in May, 2014, completed installation of electrical generating equipment at its Fort Wayne Assembly Plant that allows the facility to convert landfill gas to electricity, capable of powering about 30% of the facility, and making it the first automotive plant in North America to be powered by landfill gas.
- **Saint-Gobain**: uses a Life Cycle Assessment to measure the environmental footprint of its products, which can be used not only to reduce the environmental impact of product during production, but can be used by customers to evaluate a building's overall environmental performance.
- **Allison Transmission**: in addition to reducing their own energy consumption, Allison Transmission has developed electronic controls that improve vehicle fuel efficiency, as well as hybrid bus propulsion systems.
- **Rolls Royce**: is deeply committed to the manufacture of products that reduce consumers' energy use. For example, Rolls Royce's Trent XWB is the world's most efficient turbofan aero engine today, and in 2013 invested approximately £738M in research and

development aimed at reducing the environmental impacts of the company's products and services.

IV. The Industrial Consumers are Recognized for their Energy Efficiency Efforts

As result of their commitment to energy efficiency, and their success and leadership in environmental and energy related matters, the Industrial Consumers have received numerous awards, certifications, and recognition. A non-exhaustive list of these achievements includes:

- **Subaru of Indiana**: in June, 2012, SIA became the first United States car manufacturing plant to receive ISO 50001 Certification for Energy Management for its commitment to continual improvement in energy conservation and its environmental leadership. SIA was also the first U.S. car manufacturing plant to achieve ISO 14001 Environmental Management Certification, and the first U.S auto plant to achieve zero landfill status.
- **Chrysler**: by the end of 2014 all of Fiat Group's plants will be ISO 14001 certified, and all of the Group's main plants, accounting for over 90% of total energy consumption, will be ISO 50001 certified.
- **Eli Lilly:** participates in the Carbon Disclosure Project.
- **Honda**: in 2013, Honda's Greensburg, Indiana plant received the EPA's ENERGY STAR® certification.
- **Toyota**: Toyota's Indiana facility received the EPA's ENERGY STAR® certification, and the Princeton, Indiana plant is participating in the ENERGY STAR® Challenge for Industry which calls for a 10% improvement in energy efficiency over five years.

- **Saint-Gobain**: in 2014, the company was the EPA's ENERGY STAR® Partner of the Year Sustain Excellence Award for the fourth consecutive year. Saint-Gobain also participates in the Carbon Disclosure Project.
- **ALCOA**: participates as a Challenge Partner in the EPA's "Better Buildings" program. ALCOA's development of a $21 million state-of-the-art cast house in Barberton, Ohio, has lowered energy consumption by 40 percent. The 50,000 square-foot expansion, which is part of ALCOA's Wheel and Transportation Products business, is the first of its kind in North America and will use innovative new technology to produce billet, a bar that has been cast for milling, from re-melted scrap aluminum. The expansion was completed in October 2012.
- **Lehigh Hanson**: was the first Aggregate company in the United States to obtain ENERGY STAR® certification at some of its facilities; and, in 2013, the company's Harding Street facility in Indianapolis was the second rock quarry in the United States to receive ENERGY STAR® certification.