

DSM Spotlight

The Newsletter of the International Energy Agency Demand-Side Management Programme



IEA *Energy Efficiency Reducing Energy Bills*

Energy efficiency improvements since 1990 in IEA member countries saved over USD 550 billion in energy expenditure by 2014 – larger than the European Union’s annual fuel import bill. In the Energy Efficiency Market Report 2015, the IEA states that over the last 25 years energy efficiency improvements have saved USD 5.7 trillion in energy expenditures in the IEA’s 29 member countries. “Energy efficiency is a virtual supply of energy, meeting energy services for business and consumers while reducing their energy costs”, notes the IEA.

Energy efficiency is not only reducing energy bills for consumers, it is helping governments improve energy security by reducing imports and lowering exposure to

the international energy market. The Energy Efficiency Market Report shows that in 2014, the energy efficiency investments since 1990 have enabled the IEA member countries to avoid USD 80 billion in fossil fuel imports. Germany avoided USD 30 billion in energy imports and boosted its trade surplus by 12% in 2014 while Japan reduced its trade deficit by 8%.

Per capita energy consumption in IEA countries has fallen to levels not seen since the 1980s, yet income per capita has never been higher and access to energy services is continually expanding. The IEA estimates that energy efficiency investments since 1990 have been the most important factor to explain the flattening of

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Member Countries

*Austria | Belgium | Finland | India
Italy | Netherlands | New Zealand | Norway | South Korea
Spain | Sweden | Switzerland | United Kingdom | United States*

Sponsors

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Note from the Chairman

Which Way are We Heading?

Two articles recently caught my attention. The first was an article in the Dutch Volkskrant on October 27th with the heading “Energy Companies Have Become Less Green”. This newspaper annually ranks energy companies and has concluded they used 5% more coal than the year before, as this was the cheapest option. The German company, RWE/Essent ended in last place with a 3 out of 10 ranking.

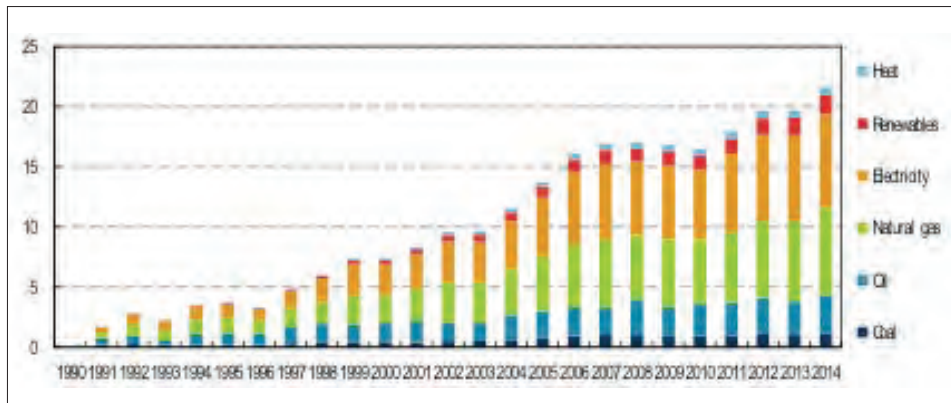
The second article, “The Green Oil Man” was published in Politico on September 30th. This article was about Fatih Birol taking the office of Executive Director of the IEA. He wants to turn the IEA into a hub of clean energy. The article contained the statement:

“If there is any energy company in the world which thinks that climate change policies will not affect their business strategies, they are making a grave mistake.”

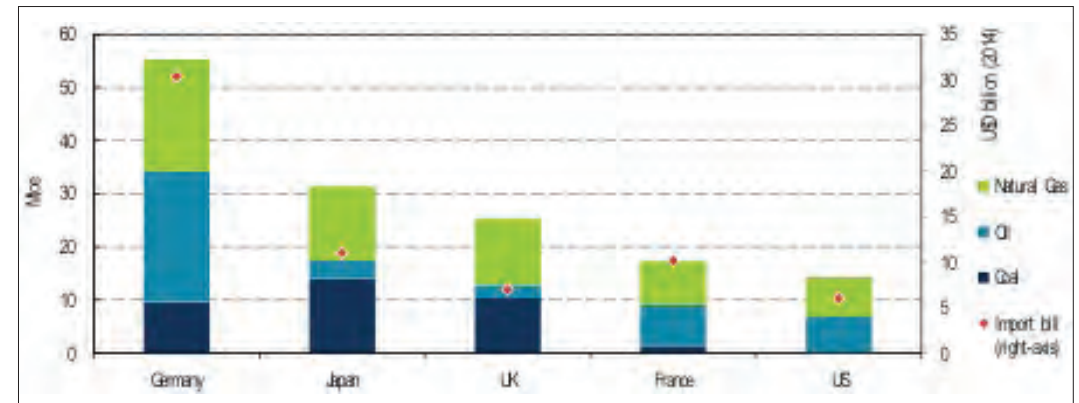
By the time this column is published, the Paris COP Summit will have been held, and even if there is an agreement, there will be details to be dealt with. And,

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Avoided TFC in IEA countries year on year, by fuel type, from energy efficiency investments made since 1990



Avoided volume and value of imports in 2014 from efficiency investments in IEA countries since 1990



energy demand seen in its member countries. Energy intensity, the amount of energy required to generate GDP, improved by 2.3% in 2014 in OECD countries, the fastest rate since 2011 and within reach of the [Sustainable Energy 4 All](#) energy-efficiency target of 2.6% per year.

Policies and markets were key to bolstering energy efficiency improvements in 2014. In the buildings markets in the United States and Germany, efficiency investments outpaced total construction investment over the last five years. This increase has been assisted by policy and government spending, which is leveraging private sector investment. Germany, for example, investment USD 2.4 billion in residential building efficiency, which leveraged USD 14 billion of private investment.

But the outlook for energy efficiency investment is being challenged by falling energy prices in

some markets. In the United States, where gasoline pump prices have fallen by as much as one-third, purchases of SUVs and other less efficiency vehicles are on the increase once again; progress towards higher fleet efficiency has stalled. Policies, such as the US's CAFE standards, should provide a backstop for continued efficiency improvement, but if the low oil price environment is a longer-term cycle, governments will need to step up efforts to ensure that the conditions for increases in efficiency investment are in place.

This article was contributed by Tyler Bryant, Project Manager of the IEA's Energy Efficiency Market Report, Tyler.BRYANT@iea.org. Click [here](#) to download the full report.

Bright Business

Showcases best-in-class
for energy efficiency

Recently, business leaders, professionals and practitioners in the energy efficiency industry gathered for the fourth annual Bright Business conference in Halifax, Nova Scotia, Canada.



The conference, presented by Efficiency

Nova Scotia, brings together more than 250 industry professionals to discuss the latest trends, tools and technologies in the energy efficiency industry. It also highlights Nova Scotia's best-in-class businesses and individuals through its Bright Business Awards. Award categories include: small business, large business, innovation, partnership, leadership, engagement and community.

This year's conference featured a number of breakout sessions ranging in topics from incentive design and approaches, to smart grids, to community energy plans and large scale energy performance projects.

International Energy Agency representative, Tyler Bryant, was there to present findings from the 2015 Energy Efficiency Market Report.

Danielle Fong was the keynote speaker at this year's event. Danielle is a Canadian entrepreneur and the co-founder and Chief

Scientist of LightSail Energy, Inc.

Danielle was born and raised in Halifax, Nova Scotia and dropped out of junior high school at the young age of 12 to attend Dalhousie University, located in Halifax. She graduated from Dalhousie in 2005 at age 17 with first class honors in Computer Science and Physics, after which she entered the Plasma Physics Department at Princeton University as a Ph.D. student.

After going on leave from the Princeton Plasma Physics program, Danielle founded LightSail Energy. LightSail Energy is endeavoring to make radically economical energy storage possible, so that nearly all energy can be reliably supplied by the sun, wind, rivers and tides. They're doing so through a new innovation in compressed air energy storage, proving that you can make fundamental advances in technology and science that's more than a century old.

In December 2011, Danielle was featured in Forbes' 30 under 30 in the Energy category, and interviewed by Forbes.com in a video titled: "[Danielle Fong May Save the World.](#)" She was named by the MIT Technology



Review as one of the top 35 innovators under 35 in 2012, and by Time Magazine as one of the 30 people under 30 changing the world.

Since then, Danielle has raised more than \$50 million dollars from the likes of Bill Gates, Peter Thiel, Vinod Khosla, and even French oil super corporation, Total Energy.

Next year's Bright Business conference and awards ceremony is set to take place in the last quarter of 2016. More information can be found at efficiencyns.ca/bright-business-conference/.

This article was contributed by Efficiency Nova Scotia. For more information visit, <http://www.efficiencyns.ca>



The year may be coming to end, but the DSM University certainly is not. In 2015 professionals held 17 webinars. The year's topics ranged from best practices in designing and implementing energy efficiency programmes and using DSM to support electricity grids to smart grid implementation and behaviour change. The webinars, which are hosted by Leonardo Energy, are one way the IEA DSM Programme is sharing the results of its work, but in addition is creating an avenue for professionals in the field and those just entering it to learn more and to share their experiences and work with others. Plans for 2016 are already underway with three webinars scheduled.

The webinars are grouped into six theme areas:

- | | |
|----------------------|--------------------|
| 1) logic of DSM | 4) flexibility |
| 2) governance energy | 5) integration |
| 3) efficiency | 6) business models |

The first webinar in 2016 will be part of the energy efficiency track. And will no doubt be of interest to many.

**Mark your calendar
so you're sure not to miss these
free webinars. See you online!**

A Brief History of Energy Efficiency Labelling

JANUARY 16

ENROLL NOW!

Energy labels have been helping consumers make more informed decisions when purchasing a product, equipment or system. These labels also are shaping market transformation strategies when combined with fiscal or financial schemes. This webinar will discuss the achievements of the first European labels and share views on how to reinforce existing schemes. The 1-hour session will address questions such as, What lessons can we learn from their implementation? What are the options for consolidating high visibility policy instruments in the future?

2016 Webinars *scheduled to date*

To enroll go to DSM University [here](#) 4-6 weeks before the event.

Energy Efficiency Labels: What Can be Learnt from the European Success Story

BENOIT LEBOT JANUARY 14 GOVERNANCE

Involving People in Smart Energy: A Toolkit for Utilities, Energy Agencies and Smart City Developers

LUWDWIG KARG FEBRUARY 18 GOVERNANCE

Advancing Utility Sector Energy Efficiency in the U.S.: Highlights of the ACEEE National Conference on Energy Efficiency as a Resource

MARTIN KUSHIER MARCH 17 GOVERNANCE

2015 Webinars

Click on the title to listen and view the presentation and suggested readings.

- ESCo Market Development: A Role for Facilitators to Play
- ISGAN Annex 2 Spotlight on Demand Management
- Using Demand-Side Management to Support Electricity Grids
- Best Practices in Designing and Implementing Energy Efficiency Obligation Schemes
- Impact Evaluation of Energy Efficiency and DSM Programmes
- Managing Variability, Uncertainty and Flexibility in Power Grids with High Penetration of Renewables
- Customized, Systemic, Strategic – The Way to Succeed with Energy Efficiency in Industry
- Taking Stock – 40 Years of Industrial Energy Audits
- Behavioural Changes Are Necessary to Get the Full Impact on Energy Efficiency. What Works and What Doesn't (Part 1)
- How to Make the Best Technology Even Better, BAT Becomes BAT+
- Capturing the Multiple Benefits of Energy Efficiency
- Consequences of Learning Curves for Energy Policy
- "Do Not Take Away Their Steering Wheel!" How to Achieve Effective Behavioural Change in the Transport and SME Domain
- Improving Energy Efficiency in Smes – An Interdisciplinary Perspective
- Smart Grid Implementation – How to Engage Consumers?
- Integrating Renewables and Enabling Flexibility of Households and Buildings – Results and Experiences From Successfully Implemented Projects
- What Job Is Energy Efficiency Hired To Do? A Look At the Propositions and Business Models Selling Value Instead of Energy or Efficiency
- Simplified Measurement & Verification for Energy Savings – IEA DSM Task 16 Approach

Nova Scotia

Energy efficiency: a source and a solution

Travel here and you will see clotheslines are part of Nova Scotia's landscape. Towels flap on slack lines billowed by salty ocean breezes. Flannel tops, fleece bottoms and patterned sheets dance between back porches and tree branches.

It's a sign; Nova Scotians get it. We understand that simple measures can keep power bills as low as they can be. We've embraced and demonstrated a natural capacity to be leaders in energy efficiency. And, it's paying off.

Nova Scotians have reduced our energy consumption by 6.7% since 2008. This year alone, we'll save \$99 million on our power bills due to electricity we no longer need. That's the highest savings per capita in Canada. And yet, we have some of the highest electricity rates in the country and a disproportionate dependency on fossil fuels.

"Nova Scotia is the only province that treats energy efficiency as a 'supply' to our electricity system," says Stephen MacDonald, Chief Executive Officer of EfficiencyOne. "Our legislation says efficiency must compete with every other supply option like wind, coal, and natural gas. But since it costs less to save energy than it does to produce it – a lot less, in fact – we're up for it."

EfficiencyOne operates Canada's first electricity efficiency utility, Efficiency Nova Scotia. They deliver non-electric efficiency and conservation services through a contract with the Province of Nova Scotia, and operate on a non-profit basis.

Government plans highlight the value of efficiency

The government's role in Nova Scotia has differed from other jurisdictions. By legislating policies that include efficiency as a fuel, we are seeing cheaper, greener fuel sources take the place of transmission lines.

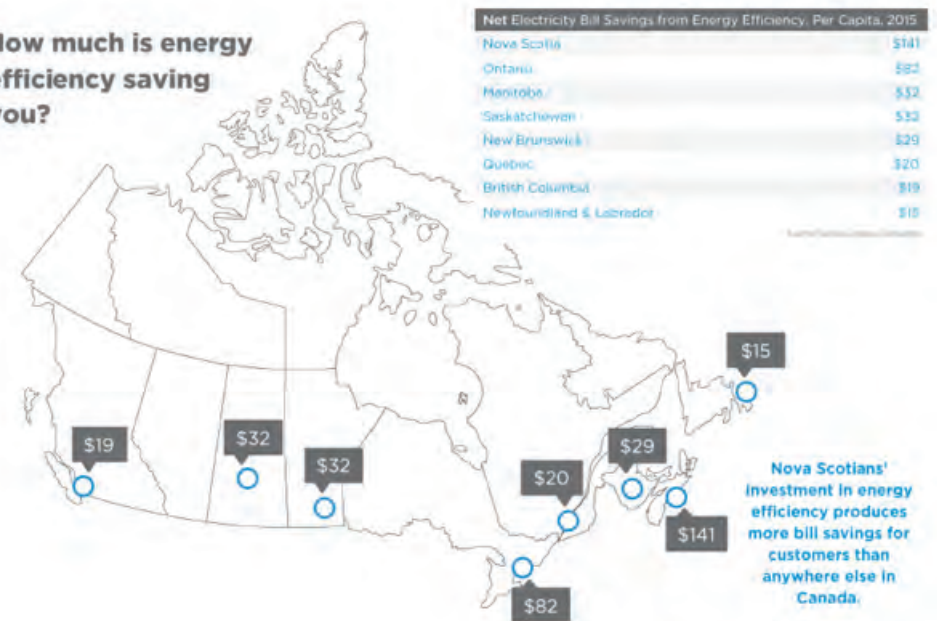
Most recently, the Province released a long-term electricity plan. Similar to its electricity efficiency and conservation plan released in April 2014, the long-term plan highlights the value of efficiency. It notes the importance of making significant investment decisions in efficiency measures and programs. Additionally, it says that Nova Scotia's strength in efficiency is a key component on how we'll address climate change in the future.

The plan also notes the value of bringing energy efficiency measures to First Nations communities, and highlights the success of Efficiency Nova Scotia's residential direct installations in Mi'kmaq homes. The project provided jobs within the community along

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Stephen MacDonald
EfficiencyOne CEO

How much is energy efficiency saving you?



with training, community engagement, data collection and the installation of energy efficient products.

A simple truth about efficiency programs

Efficiency Nova Scotia excels in piloting innovative programs. Currently, they are working on a pilot that helps Nova Scotians access a home energy assessment, at a reduced cost, during a real estate transaction. This provides key information on a home's energy efficiency, and allows buyers to add financing for efficiency investments when they're purchasing a home.

"When people can access financing support for efficiency upgrades, they tend to complete projects that see greater energy savings," says Kaelan Keys, program manager at Efficiency Nova Scotia. "They start to realize the benefits to these improvements sooner, including a return on investment that helps these upgrades essentially pay for themselves."

The pilot partners Efficiency Nova Scotia with a wide cross-section of industries. It is working with financial institutions, inspectors, appraisers and REALTORS® to launch the service, and demonstrates how the efficiency profession positively contributes to other industries and the overall economy.

MacDonald says Efficiency Nova Scotia sees one simple and consistent truth when it comes to the delivery of energy efficiency programs. "People want to reduce their bills, they want to help the environment and they want to ensure their businesses are competitive."

Often times, what they need is the financial help to invest in upgrades, and expert advice to make the right decision for their home or business.

This made a difference for Intertape Polymer Group (IPG), an industrial manufacturer in Truro, Nova Scotia. They wanted to launch an energy saving program and be more sustainable, but their first attempt did not find

"We have a lot to offer, but in an industry that is evolving so rapidly we know we also have a lot to learn. Collaborating with an international group of innovative thinkers, and other countries that are leading by example, helps us all get to the next level."

Sarah Mitchell, EfficiencyOne



success. Last year, they began working with Efficiency Nova Scotia on a strategic energy management plan.

"I think one of the important aspects of having a successful program this time has been not just the support that Efficiency Nova Scotia has given us, but really the people in the plant who stepped forward and members of our energy conservation team who worked very hard to create the savings," says Doug Stout at IPG.

After one year, the company decreased their electricity use by 1.8 million kilowatt hours. They exceeded their savings goal of 4% energy savings, for an actual savings of 6%. At the 2015 Bright Business conference, IPG won the large business award from Efficiency Nova Scotia for this achievement. They're hoping to achieve similar savings over the next year by investing in some larger capital items.

Lots to offer, more to learn

A successful track record, and innovative pilot projects are just a few of the unique contributions EfficiencyOne makes as the newest member of the International Energy Agency Demand Side Management (IEA DSM) Programme.

EfficiencyOne, with its offices based in Dartmouth Nova Scotia, is the only Canadian collaborator and first Canadian company to join the group. Sarah Mitchell, an efficiency specialist with Efficiency Nova Scotia says the staff are really proud to represent Canada on the international stage, and thrilled to host the IEA DSM members in October at the Bright Business Conference.

Contributed by EfficiencyOne, the newest member of the IEA DSM Programme, <http://www.encyone.ca>.

New Publication

Austria: The Energy Hunt (with comparison to €CO₂-Management)

This document summarises general observations and lessons learned based on the empirical analysis of two Austrian energy saving competitions – The Energy Hunt (die Energiejagd) and €CO₂-Management. The general objective of both competitions is to save energy in private homes, mainly based on changing energy behaviour and small investments in energy efficiency. The Energy Hunt is more or less based on bringing people together and helping each other in saving energy to score a 10% reduction in energy use. The €CO₂-Management approach is based on energy experts delivering individual information and the use of smart technologies (smart meters combined with an iPod). This report is one of a series highlighting case studies, which is part of the Phase I work of [IEA DSM Task 24: Closing the Loop – Behaviour Change in DSM: From Theory to Practice](#). This case study is based on written reports, discussions with stakeholders and participants in these campaigns, and interviews with both project managers.

Download the full report [here](#).



Note from the Chairman – from page 1

there will be devils in the details, and lots of them.

And that's where these two articles come together. The company RWE/ Essent, which was invited on television the evening of the publication, admitted that they might be in last place, but by closing their coal fired plant at the end of 2015 they will reach the "top 5" in 2016. The company's concern with the environment and the pressure by consumers have made them decide to go for another product and another market.

DGB, an initiative of farmers, disputes their below 4 ranking. But whatever the outcome of this debate, they promise to be even greener next year. This leaves Vattenfall as the only other energy company in the < 4 zone.

What Fatih Birol has to offer is the continuing support of the IEA and its technology network thereby giving

the newest options in the fields of technology, behaviour and economy. Plus the IEA gives policy advice. His warning that climate change policies will affect business strategies is a serious one.

It's true that the boards of the energy companies are stuck between shareholders and the market, but this is even more reason for good (super) national policies that will create a truly level playing field for renewables and put the big emitting plants out of the market.

Yes, there are still utility board members that think the economy is far more important than the environment, and hold firmly to the strength of their policies. For these people, I have one question. What do you think the CEO of Volkswagen thought before this past summer?

Rob Kool
DSM Chairman

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Editor: Pamela Murphy
KMGroup, USA



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ieadsm.org

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