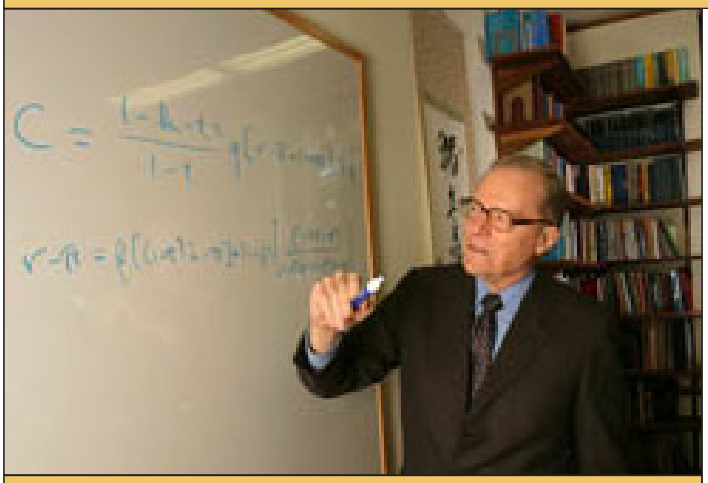
Wasteful Investments



Dale Jorgenson — the Samuel W. Morris University Professor at Harvard University, President of the American Economic Association in 2000, Founding Member of the Board on Science, Technology, and Economic Policy of the National Research Council in 1991 and served as Chairman of the Board from 1998 to 2006

What are the most impressive innovations in the sphere of energy?

The most impressive innovation in energy relate to the discovery and extraction of fossil fuels. The example most relevant to Russia is the extraction of offshore petroleum, like that in the Soviet Arctic. This will be the focus of the joint venture of Rosneft and BP. BP will provide up-to-date technology based on their experience in such areas as the Gulf of Mexico and the North Sea.

In North America the most important example is hydraulic fracturing, combined with horizontal drilling. This is an old technology but it has been developed in a way that has already had a huge impact on the availability of natural gas in the U.S. A third example is the extraction of petroleum from tar sands in Canada. This is competitive with more conventional petroleum resources at current oil prices.

Energy conservation is also very impressive. Most of the technology has been developed in Japan and Europe, following the imposition of high energy taxes and other conservation measures after the energy crises of the 1970's and 1980's. These technologies are now coming into widespread use in the U.S. With high petroleum prices low prices of natural gas make substitution of gas for oil and, especially, for coal more attractive than conservation at the present time.

Progress in wind energy production is mainly the consequence of government subsidies in China, Europe and the U.S. Solar energy is almost wholly supported by government programs, but is unlikely to be economic in this century.

What institutions set targets for innovations in energy?

Due to the popularity of government intervention in energy markets, government institutions such as the U.S. Department of Energy are very important is setting targets. Wind and solar are the most dramatic examples. However, these are not economic and most of the investment is wasteful. A particularly egregious example is the U.S. biofuels industry, which is wholly a result of government intervention.

China appears to be following this approach, leading to wasteful investment in so-called renewable energy. Both the U.S. and China would benefit from less government intervention and more reliance on business institutions, whether private or public, for decision-making on energy technology.

China needs to substitute coal in electricity generation in order to clean up the air. This can be done through properly designed environmental taxes, as proposed in the 12th Five Year Plan now under discussion in Beijing. This would also have substantial "ancillary" or subsidiary benefits for China internationally, such as the reduction in greenhouse gas emissions.

China also needs to develop domestic natural gas resources from shale, using technology already available in the U.S. The Chinese do not know how to manage this and have made very little progress. This would be highly complementary with the imposition of environmental taxes, which would fall mainly on coal. To substitute coal by natural gas is probably the most important single opportunity in energy policy for China.

To what extent energy innovation can be regarded as integral part of national innovation systems?

Better methods for minerals exploration and extraction, such as hydraulic fracturing are largely privately supported without much government intervention. Wind energy is the result of government support. Bio-fuels are a political scam, the American political system at its worst. It would be misleading to think about these disparate developments as part of "national innovation systems".

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Taking energy as an example what are the proper roles for national governments and businesses to play in innovation?

As I have already suggested, there is too much reliance on national governments in so-called innovation. The U.S. relies on markets for most of its innovation in energy, but there are also large government-sponsored programs leading to wasteful investment. Industry-government cooperation is through government subsidies. These should be eliminated.

In the age of globalization is it appropriate to say that a universal innovation system is in the offing?

Globalization is leading to a universal innovation system based on market forces. This is particularly apparent in petroleum, limited but important in coal, and significant in natural gas.

To your opinion how Russia may effectively participate in it?

Russia has major resources and can acquire the technologies required to participate in international markets through joint ventures like Rosneft/BP.

It will be tempting for government officials to get involved in the management of these ventures, but so far this seems to have been successfully avoided. Russia has now acquired quite a bit of experience in dealing with foreign businesses and

I realize that this is an unfamiliar situation for many leaders of science and technology in Russia, who were trained and grew up in a totally different situation, involving military competition between Soviet and Western blocs. However, younger leaders who have come forward in the past two decades are more capable of dealing with the new environment brought about by globalization. This is also true of business leaders of post-Soviet enterprises.

How effectively energy innovation may influence national policies and international relations?

International co-operation has to be good for international relations, especially if both sides are committed to a long-term relationship requiring a stable legal framework and continuing support through national policies.

Learn from the Norwegians! They faced a similar situation and have had three decades of experience. Government policy makers, technologists, and Russia business people in the energy industry could benefit a great deal from a program of international exchanges with the Norwegians, who would be delighted to share their experiences. They speak good English

President Medvedev rightly points out that this has been productive and should be expanded considerably. This appears to be the trend in policy-making circles.

How tough is international competition in the energy innovation market? What did it bring about and what may it introduce in practice?

Competition is very tough and this is why so many new technologies are coming forward into implementation. I should emphasize that many of these technologies have been available for a long time, such as hydraulic fracturing. Development to fit new circumstances is much more important than research. This is why a market-oriented approach is the most appropriate. Russia should continue to emphasize international collaboration rather than exclusive reliance on foreign or on domestic firms. There are many gains to be made through business-like co-operation.

Given the importance of energy resources in Russia this is a particularly fertile area for national policy-makers. They can learn how to formulate policy in a global environment, beginning with energy, which is a highly globalized industry.

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RUSNANO supports the Smart House project

First Smart House in Russia complying with the ecological BREEAM standard at the "Excellent" level will be constructed in the Chuvash Republic.

The contract for designing of the passive house was signed in RUSNANO on February 11, 2011. The Mortgage Corporation of the Chuvash Republic and the TUS building company acted as the project originators, and the famous British company AECOM, one of the world leaders in the sphere of designing and building of modern and ecological buildings and constructions, was chosen as a contractor.

The project of the passive house is implemented with the support of the Chuvash Republic Government and the Fund of Assistance to Housing and Communal Services Reforming State Corporation.

"Participants of the project have set for themselves a very ambitious task. The corporation actively supports this project as a possibility to show the operational qualities of innovative building materials, including the unique characteristics of nanotechnological products of our project companies", said RUSNANO Managing Director Dmitry Lisenkov.

www.rusnano.com

HydroVision Russia
March 28 – 30, 2011

HydroVision Russia is the hydroelectric power industry's premier event for addressing the challenges, issues and advancements associated with hydro energy production, maintenance and technology in Russia. Supported, by RusHydro, HydroVision Russia's 3 day exhibition and conference showcases the changing future of the Russian energy mix and highlights the great potential of this prevalent energy source.

HydroVision Russia comprises a high level conference programme covering the key business issues and latest technologies to promote the use of hydropower in the Russian energy mix. The conference is supported by a world-class Exhibit Hall featuring the leading Russian and international power technology suppliers, offering unrivalled networking opportunities for attendees and exhibitors alike.

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