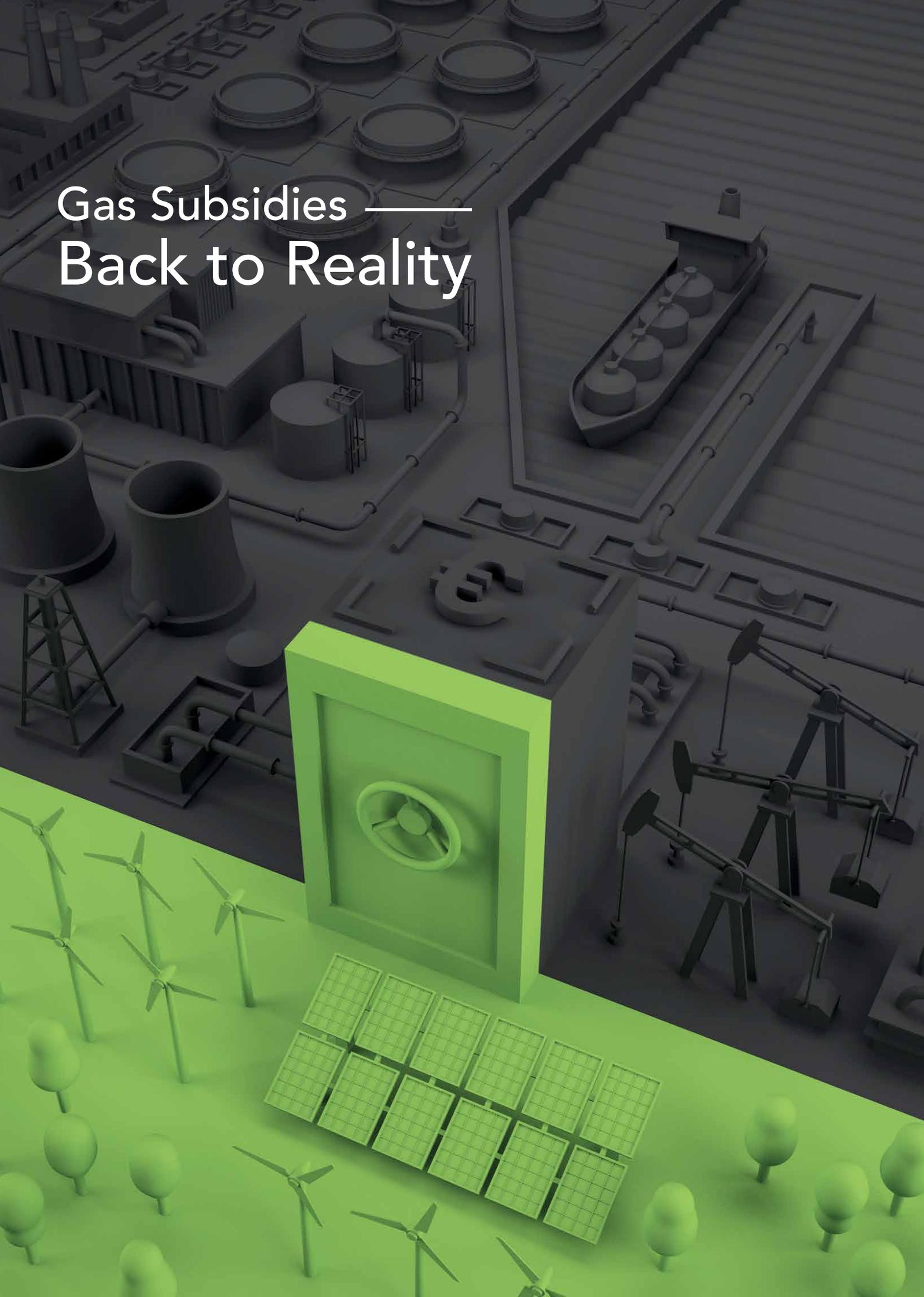


Gas Subsidies — Back to Reality



Policy Briefing

Both ENDS strives for a socially just and sustainable world. To this end we support organisations in developing countries that are active in the areas of poverty alleviation and environmental management. These local organisations have in-depth knowledge of what the problems are and often come up with inspiring, sustainable solutions. We support them by providing information and mediation in funding, lobbying and networking.



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Both ENDS

Nieuwe Keizersgracht 45
1018 VC Amsterdam
The Netherlands
Telephone: +31 20 530 66 00
E-mail: info@bothends.org
Website: www.bothends.org



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Main author: *Pieter Jansen*, Both ENDS
Co-reader: Huub Scheele, Both ENDS
Editing: *Ellen Lammers*,
www.wereldinwoorden.nl

Design: *Douwe van der Werf*, www.mrlee.tv
Illustrations: *Rutger Paulusse*, www.gwer.nl

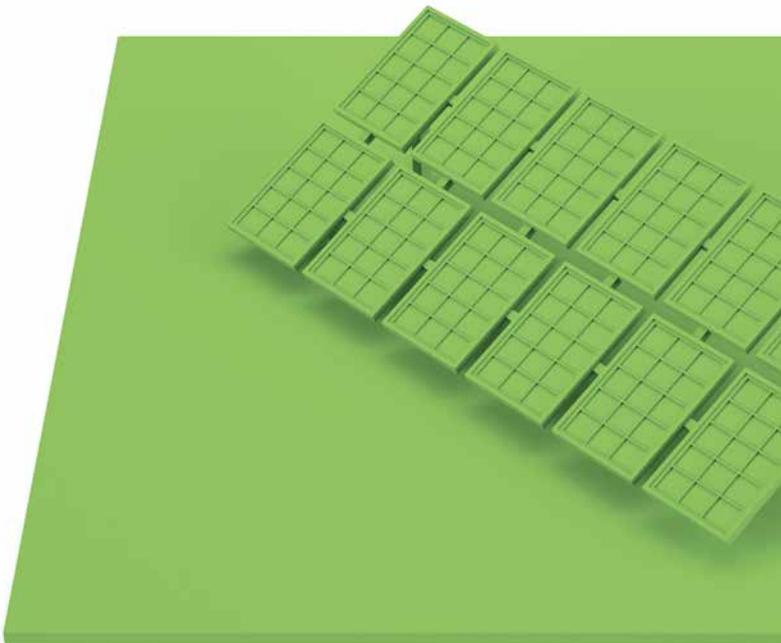
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Executive summary and recommendations¹

In Paris, in December 2015, the governments of 195 countries adopted a universal and legally binding climate deal that has been hailed as 'historic' and 'ambitious'. This deal, even if not perfect, reflects the globally shared awareness that the man-made impacts of climate change on our planet must urgently be reversed. More than anything this means that we must end the use of fossil fuels. They are the main drivers of climate change. However, the opportunities to 'decarbonize' the global economy are severely hampered by existing national and international energy policies, most importantly the large-scale and often hidden energy subsidies for fossil fuels.

According to a recent report published by the International Monetary Fund (IMF), the magnitude of fossil energy subsidies in the world is dramatically higher than previously estimated. Also (not mentioned by the IMF-report), governments additionally support the sector by investing public money in fossil energy infrastructure, which in turn creates the need for future subsidies.

To realise the ambitions of the Paris climate deal, governments need to speed up the transition to renewable energy sources. According to the IMF report, the need for subsidies to boost the renewable energy sector would disappear if only fossil fuel prices reflected the full and real cost of not only, as is the case now, their production and supply, but also the externalities such as environmental and health damage. Abolishing (hidden) fossil fuel subsidies would moreover free up substantial public resources that could be used for socially and economically important projects for the public benefit.



We therefore recommend that, in order to promote an urgent transition towards a low-carbon economy:

- **Governments** should raise additional taxes on fossil fuels to discourage their use and the environmental and health damages caused by their use. Not doing so in effect amounts to disguised subsidy.
- **Countries** should stop subsidizing fossil fuels and stop indirect subsidies through the development of fossil fuel infrastructure and exploration.
- **Existing fossil fuel subsidies** should be shifted to support and development of low-carbon energy systems based on renewable energy sources and universal energy access.
- **Europe and its member states** should learn from inspiring examples of countries that are transitioning towards a low-carbon economy, such as Uruguay.
- **Politicians and policy makers** should demonstrate the political will to play a central role in driving the switch to renewable sources. They should resist the vested interest and power dynamics of the global fossil energy industry.

Released resources should also be spent on addressing poverty and inequality, which is particularly relevant given that energy subsidies typically benefit the rich much more than the poor.

The myth that fossil fuels are cheap

In December 2015, the governments of 195 countries adopted the first-ever universal and legally binding climate deal at the UN Climate Change Conference in Paris. Developed and developing countries alike have committed themselves to a long-term goal of keeping the increase in global average temperature well below 2°C above pre-industrial levels, while aiming to limit the increase to 1.5°C, since this will significantly reduce risks and the impacts of climate change, especially for vulnerable islands and delta countries. The only realistic way to achieve these ambitious goals is to radically reduce and eventually end the use of fossil fuels. However, the opportunities to 'decarbonize' the global economy are severely hampered by existing national and international energy policies, most importantly the large-scale and often hidden energy subsidies for fossil fuels.

According to a report published by the International Monetary Fund (IMF) in May 2015² the magnitude of energy subsidies in the world is dramatically higher than previously estimated. The report distinguishes between pre-tax and post-tax subsidies. Pre-tax consumer subsidies arise when the price paid by consumers (firms and households) is below the cost of supplying energy. Post-tax subsidies arise when the price paid by consumers is below the supply cost of energy plus an appropriate corrective tax that reflects the environmental damage associated with energy consumption and an additional consumption tax that should be applied to all consumption goods for raising revenues³. Due to the extensive large environmental costs of fossil energy consumption, post-tax subsidies are much higher than pre-tax subsidies. The IMF estimates that post-tax fossil fuel subsidies represent 6.5% of global GDP, which equaled US\$ 4.9 trillion in 2013 and an estimated US\$ 5.3 trillion in 2015. As The Guardian quickly calculated, this is a startling US\$ 10 million in subsidies for polluting fossil fuels *every minute, every day*⁴.

The bulk of energy subsidies thus arise from the failure to adequately charge for the cost of environmental damage caused by fossil energy use. The real price for fossil fuels would reflect the costs imposed on governments by the burning of coal, oil and gas. These costs include the harm caused to the domestic environment, the health expenses for people suffering from illnesses caused by air pollution⁵ as well as the costs of the harm caused to people across the globe affected by the floods, droughts and storms that are driven by emission-led climate change.

On a positive note, these shocking figures show that the abolishment of post-tax subsidies for fossil fuels would generate very substantial fiscal, environmental and welfare gains to countries. According to the IMF report, eliminating post-tax subsidies in 2015 could raise government revenue with 3.6% of global GDP, cut global emissions by more than 20%, and cut pre-mature outdoor air pollution deaths by more than half (that is, saving 1.6 million lives). Furthermore, because existing fossil fuel subsidies overwhelmingly benefit the rich, by eliminating these subsidies the freed up resources could also be used to reduce poverty and inequality. The indisputable benefits of eliminating fossil fuel subsidies as shown by the IMF report, will hopefully strengthen the increasing international interest in energy policy reform.



Subsidies breed more subsidies

According to the IMF, the Netherlands grant some € 9 billion in hidden subsidies on fossil energy annually. The largest part, namely € 5.17 billion, goes to gas. Gas might be the cleanest of the fossil fuels – while coal, the dirtiest, receives as much as half of the global subsidies - but it is still a fossil fuel. The Dutch hidden subsidies include the lack to charge for external environmental costs, as well as the discounts in energy prices granted to power stations, large-scale horticulture in greenhouses, chemical and metallurgic industries.

In addition to these subsidies, but not mentioned by the report, the Netherlands heavily invests in the construction of energy infrastructure, with the building of a Liquefied Natural Gas (LNG) terminal at the Rotterdam port in 2011 as the most notable example. The terminal is meant to function as a transportation hub, to bring in and store gas for the markets. The Dutch government wants the country to become the 'gas roundabout' of Europe. The Netherlands is the largest producer and exporter of gas in the EU. However, because the domestic gas production is expected to continually decline over the coming decades, the Dutch government wants to maintain its position as a gas supplier, by shifting from being a gas producer into a merchant of imported gas. Transmission pipelines have been laid, gas storage facilities have been built and parts of the gas transmission network outside the Netherlands have been acquired¹⁰.

Rising health with carbon free wealth

To stop subsidizing in itself is not enough to decarbonize the economy. Statistics show that carbon use and emissions tend to go up with a rising GDP. The richer people are and the more they spend, the more likely they are to contribute to global warming⁶.

The growth itself not necessarily forms the impetus for generating economic wealth and achieving good health and a high quality of life. Growing emissions result in a growing number of air-pollution victims.

To the contrary, statistics show that as countries get richer and people's living standards improve, the relationship between economic growth and life expectancy weakens. After a certain threshold, economic growth is no longer required for improving people's health and life expectancy⁷.

The richest countries do not show automatically best health for their inhabitants. Acceptable levels of health and wellbeing can be reached without having to need an ever increasing GDP. By using the advantages of renewable energy sources like wind and solar it can very well be possible to limit carbon emissions and meanwhile achieve good health and wellbeing.

Uruguay might be setting an interesting example that deserves further research in this respect. At the Climate Conference in Paris, Uruguay received praise for its progress on decarbonizing its economy⁸. Energy investments – mostly for renewables, but also liquid gas – over the past five years surged to 15% of the country's annual GDP, and this was achieved without energy subsidies. Uruguay at the same time has a life expectancy of 77.5 years. This is already pretty close to the life expectancy of 80 years in the richest countries, but achieved at a fraction of the CO₂ emissions per capita that are common in the richest countries⁹. The example of Uruguay shows that it should be possible to make dramatic reductions in emissions in the richest countries without any loss of health quality and wellbeing.



These investments have various impacts.

First, as long as the investments for the terminal have not been written off, the infrastructure causes a lock-in effect in gas consumption. Second, there are financial consequences in terms of future subsidies. Because gas exploration and production is getting economically less and less viable, government support will be increasingly vital for keeping the production economic. In other words, because no one will want an idle production site or terminal, the very construction of such infrastructure automatically builds in the need for future gas subsidies.

This second point does not only concern the Netherlands. The building of the LNG terminal in Rotterdam for the supply of gas to consumer markets in Europe, directly facilitates the subsidized exploration and extraction of natural gas for many years to come in countries like Russia. In fact, countries of the European Union, including the Netherlands, are increasingly dependent on imports of natural gas from remoter areas. Dutch fossil fuel company Shell now focuses on a cooperation with the Russian company Novatek for the exploration of natural gas fields in the Yamal peninsula in the Russian arctic.

However, economic analysis of Russia's Yamal LNG project indicated¹¹ that without tax breaks and other government support from Russia the project (exploration and production) would not have been economically viable at all. The major reason for loss of viability is that resources are becoming less and less accessible and therefore scarcer and more expensive. Tapping new reserves brings along huge and expensive technical difficulties.

According to the British Overseas Development Institute (ODI)¹², the governments of rich countries (G20, including Russia) already spend US\$ 88 billion every year to support the exploration of fossil energy – this is more than double the amount that the oil and gas companies themselves are investing. Quite often, this government funding is channeled through multilateral development banks like the EIB, or infrastructure investment funds that are created for the purpose. In fact, the European Investment Bank (EIB), which is the house bank for the EU, contributed 50% of the external financing (€ 394 million in loans) for the Rotterdam LNG terminal.

Long-term contracts and spot markets

Public money is continuously spent to sustain the production of gas despite diminishing returns. Additionally the energy infrastructure built secures the value of new financial products, which almost magically turns gas trading and gas infrastructure into profitable business opportunities and probabilities in the form of asset value for private investors. This public support for the financialisation of real economic hardware can be considered as a perverse extra economic stimulus, which causes a further fossils energy lock in effect.

For decennia, the trade in natural gas was dominated by long-term contracts accompanied by long-term price agreements. This was a logical consequence of the dependency of the gas sector on expensive pipelines and other infrastructure, with big suppliers and big buyers who were mutually dependent on each other. However, when investors talk about energy infrastructure these days, it is not only about hardware infrastructure, but also about finance and infrastructure development in terms of assets management.

Without government support from Russia, and the building of infrastructure with public money, the Yamal gas exploration and production would not have been economically viable at all. Since the public support is guaranteed, contracts have been signed between the Russian gas company Novatek, Russia's largest natural gas producer, and Shell for the supply of LNG for more than 20 years. Shell not only offers the technology, but as well the access to its logistics and financial infrastructure for asset swapping.

This means that swaps can be utilized to route Yamal LNG's shipments to European markets in exchange for deliveries to its Asian customers from other LNG producers instead of physical deliveries at seasonal periods that the Northern route from Yamal peninsula to Asia is inaccessible.

Since a decade or more, important market players like the Dutch Gasunie, and the British and Dutch governments have promoted the introduction of a spot market for gas. At a spot market, commodities are traded for immediate delivery: cash and commodity must be delivered two days after the trading date. Needless to say, a spot market in the gas sector can only function if the sufficient infrastructure for transporting gas exists.

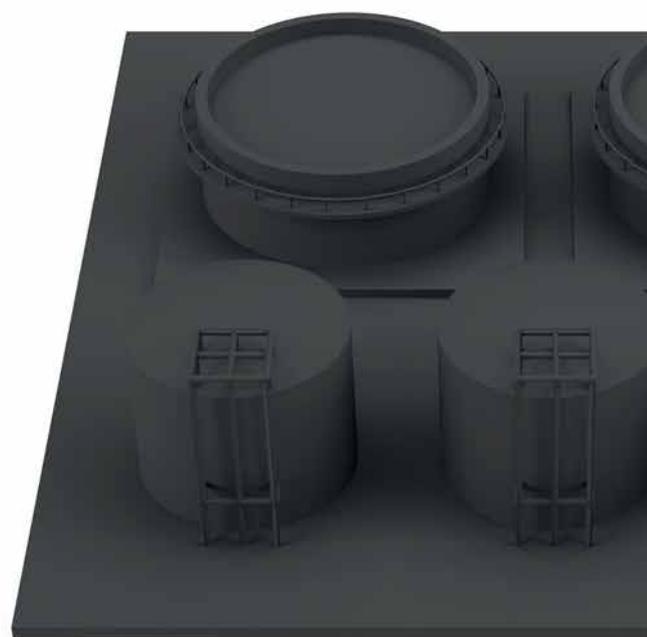
Thus, to facilitate this market model and enlarge the range of choice between gas supplies from different sources, expansion of the gas transport infrastructure between European countries, more LNG terminals and more storage capacity are needed. Spot markets allow producers of surplus energy to quickly locate available buyers and negotiate a rate for that day – very different from the long-term rates that were the norm in the past. Because spot market prices are known to the public almost as soon as the deals are closed, spot markets attract speculators. The spot market model for gas promoted by the Netherlands and other EU countries indeed offers extensive opportunities to 'financialize' the trade in gas through speculation, hedging, swapping and different types of derivatives. And also the building of the infrastructure itself offers opportunities for extracting asset value. For the asset-value of infrastructure it not always matters whether the built infrastructure remains underutilized, or is idle. Its asset value is the probability of its use, and the possibility it creates to use the asset value for hedging all type of risks or for swapping. Instead of creating real functionality and value, this creates the danger of an economic bubble.

The spot market model may bring in more flexibility for producers and buyers, it does not do away with the public stake in infrastructure development and long-term contracts that characterize the relation between public and private partners in the energy market for decades.

Gas roundabout

Not only Shell, also Gazprom, owned half by the Russian government, signed a 20-year contract with Novatek and is planning to sell most of its Yamal LNG volumes to customers in Europe and America. Shell is going to build a specialized LNG bunker ship that will be based at the Rotterdam terminal to deliver LNG to LNG-fuelled vessels in north-western Europe. Complementary to that, Shell and Gazprom together will build a small LNG terminal in Rotterdam as an expansion of the big Gate Terminal built in 2011. The latter one is co-owned by the Dutch company Vopak and the state-owned Gasunie. Russian Gazprom holds shares in the Gasunie and thus co-owns the gas infrastructure of the Netherlands.

The Dutch government and gas industry are proud of the fact that the Netherlands are becoming the central gas hub for Northwest Europe, thanks to major investments in gas production, gas storage, gas pipelines and gas research. However, it should be noticed that all the large infrastructure projects to facilitate the daily spot markets and just-in-time deliveries of gas from places where it is cheapest, are co-funded with public money. The Dutch Rekenkamer (the National Audit Office) calculated that the state-owned EBN and Gasunie have invested € 8.1 billion in the 'gas roundabout' infrastructure. The Rekenkamer further established that another € 7.2 billion had already been spent, even before a study on its usefulness had been carried out. It is regrettable that not enough thought has gone into the question whether this investment really serves Dutch public interests. In addition to the lock-in effects and the need for future subsidies spurred by the investment, the fact that the infrastructure runs through Dutch soil, does not provide any future certainty about imported gas being available to buyers in the Netherlands.



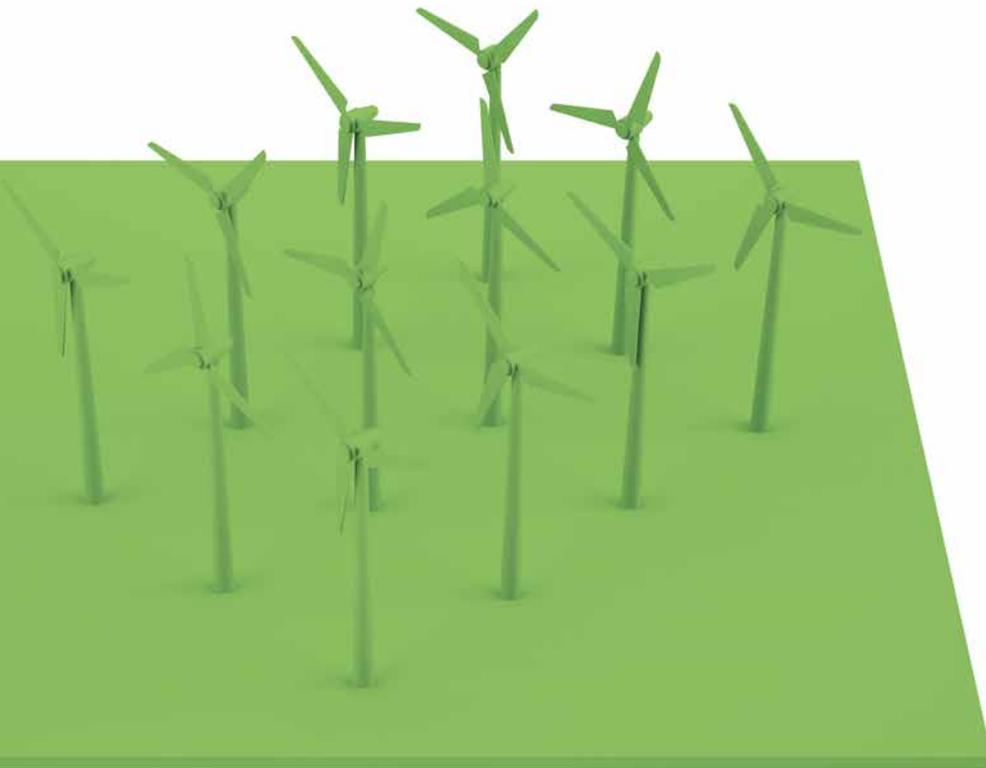
Conclusion

According to a report published by the IMF the opportunities to 'decarbonize' the global economy are severely hampered by large-scale and often hidden energy subsidies for fossil fuels.

This paper argues that subsidizing fossil fuels is irrational behavior from a perspective of environmental sustainability and people's health. It is also irrational from a macro-economic and financial viewpoint, as fossil energy becomes scarce and subsidies impose large fiscal costs and provoke 'financialisation'.

We recommend the Dutch government to learn from inspiring examples of countries that are transitioning towards a low-carbon economy, such as Uruguay.

Politicians and policy makers should muster up the political will to play a central role in making the switch to renewable sources.



Footnotes

1. This Briefing Paper builds on and is complementary to earlier Both ENDS briefing papers on gas infrastructure investments, among which: Mongolia's natural resources, burdening or benefiting democracy?, Both ENDS February, 2015 (http://www.bothends.org/uploaded_files/document/Mongolias_natural_resources_burdening_or_benefiting.pdf); The price of gas, Both ENDS, 2014; Gas Roundabout, EIB capital investment in excess capacity, Both ENDS and EIB Counterbalance, 2014; Myths and Facts, energy in Europe, EIB Counterbalance, June 2013 (<http://www.bothends.org/en/Themes/Projects/project/50/The-Price-of-Gas>). Tapping the potential of renewables, Both ENDS, June 2012 (<http://www.bothends.org/en/Publications/document/78/Tapping-the-Potential-of-Renewables>).
2. Coady, Parry, Sears and Shang, How large are global energy subsidies?, IMF, Working Paper No. 15/105, May 2015.
3. Ibid, IMF 2015
4. Fossil fuels subsidised by \$10m a minute, says IMF, The Guardian, 18 May 2015, <http://www.theguardian.com/environment/2015/may/18/fossil-fuel-companies-getting-10m-a-minute-in-subsidies-says-imf>
5. The IMF also includes traffic accident casualties in the subsidy calculations because increased fuel prices are a direct way to reduce them.
6. The spirit level, Richard Wilkinson and Kate Pickett, 2009.
7. Ibid, Wilkinson and Pickett, 2009.
8. Uruguay makes dramatic shift to nearly 95% electricity from clean energy, The Guardian, December 2015.
9. World life expectancy.com, 2015.
10. Myths and facts: Excess capacity gas roundabout. The Netherlands, Both ENDS 2014.
11. Government Support to Upstream Oil & Gas in Russia, Lars Petter Lunden and Daniel Fjaertoft, Sigrá Group, 2014.
12. The fossil fuel bailout, ODI and Oil change International, 2014.
13. Gas roundabout: benefit, need and risks, The Netherlands as the European gas transmission hub, Dutch court of audit, June 2012.

