Energy Monitor September

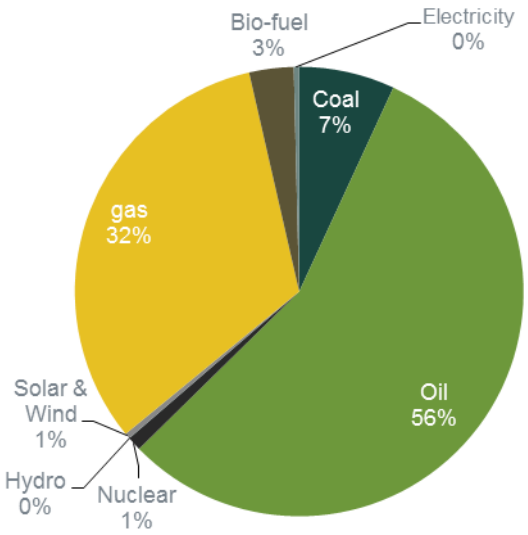
Balancing energy markets

Group Economics
Commodity Research

3 September 2013

- **The Dutch transition towards a more renewable energy policy is an important step**
- **Electricity prices for consumers are under pressure…**
- **…but energy producers are facing significant investments in order to reach carbon-reduction targets**
- **Oil prices will peak in the course of September**

Figure 1: Energy mix in the Netherlands (in %)



Source: International Energy Administration (IEA) 2009, ABN AMRO Economisch Bureau s

Figure 2: European carbon emission prices

Source: Thomson Reuters, ABN AMRO Group Economics

In July, social partners, environmental organisations and the Dutch government took an important step in the Netherlands' energy transition process. They committed to increasing the share of renewable energy in the overall energy mix by signing the National Energy Agreement. In this update, we answer the question of how the agreement relates to recent developments in the German energy market and explore the possibilities of an International Energy Agreement. Furthermore, we examine the impact of European levies on imports of Chinese solar panels and the need for investments in the Dutch sustainable energy sector. Finally, we zoom in on recent oil price developments and explain why we expect oil prices to drop after the summer.

The Dutch energy mix: a tough issue

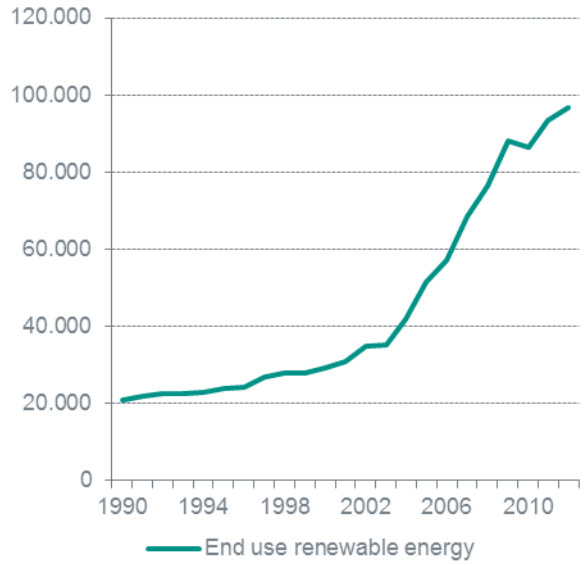
While oil prices remain at historically high levels, the drop in oil and gas prices that we expect could lead to lower energy prices for both industry and consumers. Imports of cheap (and sometimes even free) energy from Germany will also help to keep inflationary pressure low in the Netherlands (see German Energiewende on the next page). This is a positive economic development, as increasing demand can be met without raising prices. It already occurred earlier this year, when an increase in demand for gas, after a long period of below-average temperatures, led to an approximate 0.2% positive contribution to Dutch GDP.

While lower oil prices are good for consumers and industry, lower energy costs also have the drawback of possibly leading to less investment in sustainable energy. Developments and investments in renewable energy are generally under pressure for three reasons: the US shale revolution; the rise in coal use in combination with low carbon prices; and the fast growth of energy demand in emerging markets. Lower energy prices diminish the economic need for further development of the energy mix. One method to support renewable energy is to restructure the EU emissions trading system, such as reducing the amount of emission rights and creating scarcity. Higher carbon prices are needed to meet the carbon-reduction targets set for 2020. In July, the European Commission approved a plan to postpone the release of new emission rights as a one-off measure. This will create time to find a more structural solution. The impact on the carbon prices has been limited so far.

A national energy agreement: an important first step

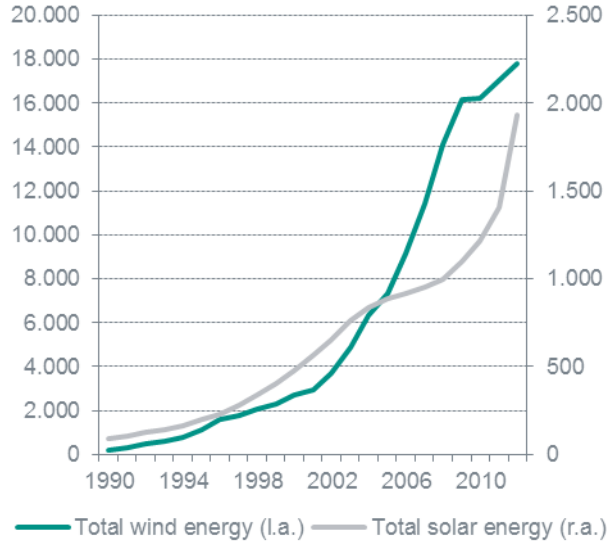
The Dutch National Energy Agreement was an important first step toward more renewable energy. It outlines measures and regulation that should lead to energy savings, climate control and clean technology. One part of this agreement is the delay of the target for attaining 16% of renewable energy in the energy mix. In the agreement, it is postponed from 2020 (now 14%) to 2023. Besides that, a loan fund will be established to enable house owners – by providing a loan – to invest in energy-saving improvements. Furthermore, the Netherlands will strongly invest in wind energy, both on land and sea. As a

Figure 3: End use renewable energy (Netherlands) (terajoules)



Source: CBS Statline, ABN AMRO Group Economics

Figure 4: Total Dutch wind and solar energy (terajoules)



Source: CBS Statline, ABN AMRO Group Economics

result, the total amount of available megawatt of wind energy will rise to 4.450MW in 2030 from 250MW now. Finally, several coal plants will be closed in the coming years.

A subsidy scheme – 'Stimulering Duurzame Energieproductie' (SDE+) – is the most important tool in the agreement to help stimulate new investments in renewable energy. It focuses on companies, consumers and (non-profit) organisations, with EUR 3 billion available to support projects. There was also a subsidy for consumers totalling EUR 50 million for 2012 and 2013. The budget, however, was depleted due to high demand; new requests are no longer being accepted. The National Energy Agreement, which contains more measures than described above, is expected to create 15,000 new jobs.

Solar energy: saved or not?

Now that the subsidy for consumers is no longer available and the costs of imported Chinese solar panels are rising, the question is whether the increase in the number of solar panels installed during the past three years will continue at the same pace. In addition to consumers needing to pay more (due to the lack of subsidies), the price of Chinese solar panels has also risen as a result of an agreement between European and Chinese leaders. Chinese exporters are paying a minimum price of EURc 56/peak power rating (Wp) extra for the first 7GWp. The estimated other 8GWp of imported solar panels are subject to 47% import tax. With these agreements, solar panels became more expensive for European consumers, but it is positive news for European solar panel producers. The tax advantage for cooperations and house owner associations on solar energy– as described in the agreement – could lead to new local initiatives which may keep the rise in solar panel demand stable. But, if solar panels in the energy mix need to continue to rise, the cost recovery as well as performance will become even more crucial. Therefore, lower costs and a higher return must be realised during the coming years.

The German Energiewende

Die Energiewende, or the transition of the German energy mix, has received mixed reviews. Criticisms were triggered by higher energy prices and the fact that Germany is still dependent on fossil fuels. In July 2011, the German Parliament decided to transform the energy mix. The German carbon reduction targets, however, remained unchanged. They call for a drop of 40% in 2020 and of 80% in 2050, with the baseline being 1990. These targets, however, must be reached without the help of nuclear energy. After the nuclear disaster in Fukushima, Japan, Chancellor Angela Merkel imposed an immediate closure of several nuclear plants. Partly due to the needed high investments in the energy sector, Germany's economic growth accelerated. Therefore, in addition to achieving energy targets, the Energiewende also stimulated industrial activity.

Many new investments in wind and solar energy, as well as in the energy infrastructure, are necessary. Furthermore, the need for back-up energy generation (by gas and/or coal plants) remains, especially as it is extremely hard to store wind and solar energy for later use. This back-up is thus not only necessary due to weather conditions becoming more extreme, but is also (part of) replacing nuclear energy. As a result of the significant rise in the use of coal plants, carbon emissions have risen during the past two years. While gas prices in Europe are high and renewable energy strongly depends on subsidies, it seems that coal plants are still the most economical means for electricity production.

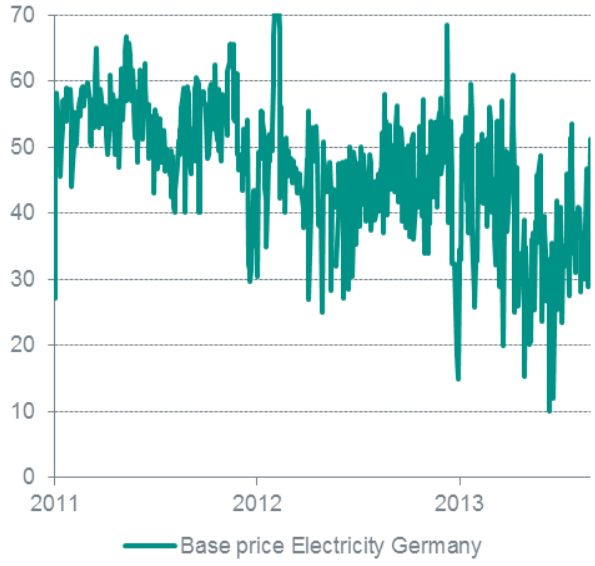
The impact of the Energiewende in Germany is also felt in the Netherlands. At

Table 1: German energy mix 2009 versus 2012 (in %)

	2009	2012
Coal	22.2	24.6
Oil	34.7	33.3
Gas	21.7	21.0
Nuclear	11.0	8.0
Renewable	8.8	11.7
Other	1.6	1.4

Source: Arbeitsgemeinschaft Energiebilanzen, ABN AMRO Group Economics

Figure 5: Base Electricity price Germany (EUR/MWH)



Source: EIA, ABN AMRO Group Economics

times, the Germans have an immediate oversupply of wind energy. This leads to high volatility of German electricity prices. As a result, this oversupply is exported at reduced tariff (or sometimes even for free) to other countries, such as the Netherlands. As a result, Dutch gas and/or coal plants are temporarily shut down, which adds significant pressure to the returns of these plants. Nevertheless, investments in these fossil-fuel plants remain necessary, given that the electricity deliveries from Germany are not stable. With the need for back-up capacity - in order to meet peak-demand - the oversupply in Germany and the planned increase of Dutch solar and wind energy, a significant oversupply of electricity is looming in the coming years. This will keep consumer prices under pressure, while companies and governments are facing high investments to facilitate the transition towards more sustainable energy.

An International Energy Agreement would be advisable

The Dutch National Energy Agreement is a good step towards more renewable energy. It is, however, in large part driven by local initiatives, possibly supported by national subsidies. Policies may therefore differ per province or community. Due to differences in opinion, individual interests will continue to dominate. Broad cooperation will be needed to come to a well-balanced energy mix. Such a mix is needed to reduce carbon emissions, stimulate new investments and guarantee the supply of sufficient energy (without creating an even bigger oversupply). The final goal is to reach an energy offering in 2050 based on 100% renewable energy. If this transition goes too fast, it may lead to the same difficulties we currently see in Germany.

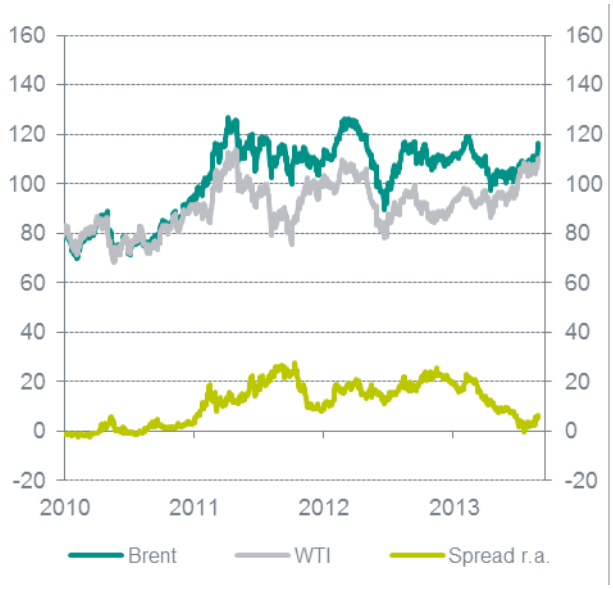
The transition of the energy mix should happen at a modest pace, leading to carbon reduction and a stable energy supply, which is affordable for both consumers and industry. Subsidies seem to be indispensable. Stimulating further technological development and the use of transition solutions (such as carbon capture storage or shale gas) must also be part of the discussion. Such solutions can only be part of the transition if they are safe; socially, economically and ecologically.

As long as European leaders do not find a common interest in creating a wide-spread and well-supported energy mix, national governments will continue to focus on domestic policy. But as energy prices are significantly higher in Europe than in the US – and therefore have a negative effect on Europe's competitiveness – this topic will surely be discussed at the next EU summit talks. We believe that, following the Dutch example, there should also be an International Energy Agreement in which safe and sustainable energy at competitive prices is guaranteed.

Oil price driven by opposing forces

Two opposing forces are currently driving oil prices. On the one hand, they are finding support based on the ongoing tensions in the Middle East. Especially the possibility that these tensions might spill over to major oil producers, leading to an increase of the risk premium. There is unrest in several parts of the Middle East. In Egypt, the situation is extremely tense, after the army deposed the Islamitic President Mursi. Syria faces a military intervention by the international community after the government allegedly used poison gas. Neither Egypt nor Syria are major oil producers, nevertheless the situation is being closely monitored due to fear of a possible spill over towards the surrounding countries. The larger oil producers, Iraq and Libya, are facing lower oil output due to attacks on pipelines and production wells. Finally, Iran has cut back its oil production in reaction to the European and US sanctions, which were imposed to counter Iran's nuclear policy. This adds pressure to

Figure 6: Brent and WTI crude (USD/barrel)



Source: ABN AMRO Group Economics, Thomson Reuters

Table 1: ABN AMRO oil and gas price forecast (Oil prices in USD/barrel, Gas prices in USD/mmBtu)

Price	Q3 2013	Q4 2013	2013*	2014*	2015*
Brent	105	105	105	95	90
WTI	100	100	95	90	85
NG**	4.00	4.00	3.90	4.50	5.00

Source: ABN AMRO Group Economics
* year average ** Natural Gas Henry Hub
(Please see our Quarterly Commodity Outlook for details regarding our longer term forecast)

Table 2: Oil price upward and downward potential

Upward potential	Iran's dispute with the West escalates into a serious (military) conflict, hurting production and transport in the Middle East
	New calamity increases worries about production and spare capacity (like hurricanes, Syria)
	Economic recovery sets in at a faster pace than forecasted
Downward potential	Worries regarding eurozone debt crisis continue or even increase (Greece, Spain & Italian yields)
	Economic data disappoint (mainly China and the US) hurting global economic growth and prompting a downward revision in the oil demand outlook
	Production is higher than forecasted or strategic reserves are released, easing fears on spare capacity

Source: ABN AMRO Group Economics

global reserve capacity. The lower output has been, up to now, balanced by increased production in non-OPEC countries (US and Canada) and Saudi Arabia. But even despite these tensions and the lower oil output in the mentioned countries, the International Energy Agency still registers overproduction in global oil production.

On the other hand, there is uncertainty regarding the Federal Reserve tapering its monetary stimulus measures This creates a cap on oil prices. If the Fed decides to announce the cutback of its stimulus measures to support the US economy, it could have a significant impact on commodity prices, including oil and gas. A (gradual) reduction of the bond purchases by the Fed will lead to a rise in yields, which in turn will lead to the US dollar gaining strength. A stronger dollar would add pressure to commodity prices, as they become less interesting as investments. ABN AMRO expects the Fed to announce the start of its tapering operation in September.

In the near term, the uncertainties about the Fed policy and developments in the Middle East could keep oil prices elevated. In fact, a serious test of the February high could be possible in the very near term. However, as long as these tensions do not affect the major oil producers – especially Saudi Arabia – and thus do not add even more pressure to oil production in the Gulf region, a significant oil price rally seems unlikely. The Fed's announcement will, in fact, result in increased pressure on oil prices. We expect that as long as the situation in the Middle East does not escalate, the oil price will start to decline in the course of September. With oil output expected to continue to rise at a faster pace than the gain in global demand, the pressure on oil prices will remain. As a result, our longer term forecast implies modestly lower oil prices on the back of oversupply. The start of Fed hiking expectations (H2 2014) and a higher USD could be headwinds as well.

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