

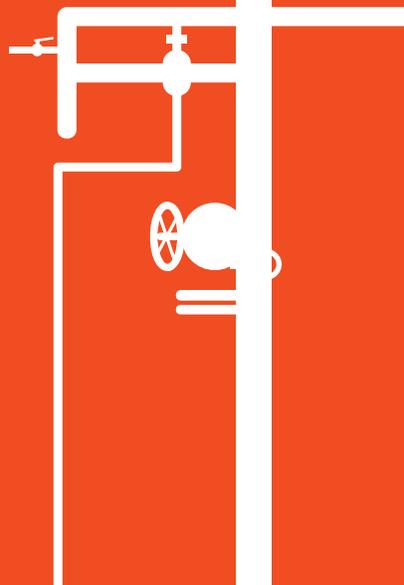
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NATURAL GAS LOCK-IN CURRENT POLITICS IN THE EUROPEAN UNION



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INTRODUCTION

Struggles to implement energy and climate policy that combine the interests of EU member states plague the future of energy politics in Europe. Policy-makers promise emissions reductions while at the same time promote increases in fossil fuel infrastructure and subsidies. Several contradictions in EU policy regarding energy are inherent. However, none of these measures include the important discussion of an energy transformation that would leave fossil fuels underground.

At the forefront of this debate is the role of natural gas. Proponents claim it as an important, clean energy source needed as a 'transition' fuel, while social movements and communities increasingly organize against dangerous gas fracking techniques and increased gas flaring across the globe. Where petroleum may receive important media attention, and coal and nuclear are either loved or hated, natural gas is sold to the public as a neutral fuel.

The paper was born out of a debate on natural gas (referred to as 'gas' interchangeably in this paper) during a series of meetings hosted by the Rosa-Luxemburg-Stiftung, Brussels Office, on energy in Europe in 2013. Three key points emerged in these discussions which have led to this publication.¹

¹ The authors acknowledge that this paper is by no means an exhaustive research on natural-gas and several other aspects of gas impacts are equally important to critique.

The first part is regarding the inherent contradictions between gas-related infrastructure expansion and plans for emission reductions. We point to the increasing 'lock-in' effect massive infrastructure projects have in continuing extraction. As such, we explore the current geo-political conflict between the Ukraine, Russia and the EU.

The second part explores European gas markets and the push for implementing a natural gas spot market. The pricing system in Europe should be agreed upon in 2014 in the context of the implementation of provisions already included in the third EU energy package. The spread of spot and related futures markets for gas in Europe is problematic because it aims to consolidate the vision of gas as a commodity and its financialization.

In a third part we explore natural gas-related struggles in terms of environmental and social impacts from an environmental justice perspective. In this final point we scrutinize natural gas touted as a 'transition fuel' and the implications that ending fossil fuel dependency has under this claim. Proponents assert that natural-gas is an important clean energy source needed as a transition fuel, while social movements and communities increasingly organise against dangerous gas fracking techniques and increased gas flaring across the globe.

Finally, we conclude with further questions and the understanding that several contradictions in EU policy regarding energy perpetuate fossil fuel dependency. Moreover, the EU lacks comprehensive measures leading to the important energy transformation that would leave fossil fuels underground.

Box 1: Key numbers on natural gas in the EU

- Natural gas supplies 25% of all energy in the EU*
- 32% used for electricity production*
- 27% in households *
- 20% in industry *
- 10% in services*
- 11% for other uses*
- EU natural gas production dropped from 233 BCM in 2001 to 150 BCM in 2012** (Likely to drop to 20 – 30 BCM in 2050)
- EU natural gas consumption increased from 452 BCM in 2001 to 503 BCM in 2010, and then dropping to 444 BCM in 2012**
- Natural gas price in Germany increased from \$3.66/million BTU in 2001 to \$11.03/million BTU in 2012**
- In 2050 natural gas use in Europe should be below 150 BCM to stay within the 2 degrees global warming limit.

* 2010 Eurostat, ** BP statistical review of World Energy, June 2013

BCM = Billion cubic metres (of natural gas)

BTU = British thermal unit (1000 BTU/h ≈ 293 W)

Box 2: EU directives shaping EU natural gas policy

- The Third Energy package containing rules on open access to gas pipelines, an integrated gas market
- Regulation on security of gas supply
- The emissions trading directive
- National targets for non ETS emissions
- Energy Efficiency directive

1 NATURAL GAS IN THE EUROPEAN UNION: AN OVERVIEW

The EU is the largest net energy importer. EU total energy dependency reached over 54% in 2011.² Estimates on energy dependency at this rate are predicted to reach 70% by 2030.³ The EU imports more than 85% of its oil, 65% of natural gas, and an astounding 97% of the uranium used in European nuclear reactors is mined abroad.⁴

Currently, 25% of all energy used in the EU is from natural gas. Only one third of it is produced within the EU; two thirds are imported. Main features are further that gas production within the EU is dropping, gas consumption increased until 2010 but is dropping since then, and gas prices are rising (see Box 1).



2 International Energy Agency, Key World Energy Statistics 2013.

http://www.iea.org/publications/freepublications/publication/KeyWorld2013_FINAL_WEB.pdf

3 European Commission "The EU Energy Policy: Engaging with Partners beyond Our Borders", 2011.

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0539:FIN:EN:HTML>

4 Ibid. See also: Carbon Trade Watch, "Extractive Energy: How the EU ETS exacerbates climate change," Nov 2013.

<http://www.carbontradewatch.org/articles/extractive-energy-how-the-eu-ets-exacerbates-climate-change.html>

The majority of natural gas extracted inside Europe originates both from the North Sea and from the Groningen gas field in the Netherlands.⁵ Gas production in the North Sea started in the 1970s and peaked in 2000. The Groningen gas field, the largest gas field in Europe, was discovered in 1953 and peaked around 1974.⁶ It is expected that the Netherlands, now one of the largest gas exporters in Europe, will soon, by 2023, fail to produce enough gas to meet its own demand.⁷

According to the European gas industry, the EU's gas demand is expected to increase to 43% by 2030 compared to current consumption levels.⁸ Total European gas production will keep falling with the declining production in the Netherlands and the North Sea. It is unlikely that European shale gas produces enough fuel to replace the North Sea and Groningen production.

The EU relies heavily on only a few countries for energy supplies. Russia, Norway and Algeria supply 85% of gas imports, and over half of crude oil imports.⁹ However, Russia is by far the largest fossil fuel supplier to the EU.

Map 1: 15 States undertake 84% of the worldwide natural gas production

Wikipedia By St.Krekeler (CC BY-SA 3.0)



5 BP statistical review 2012

6 <http://www.ebn.nl/en/OverEBN/Pages/Importance-of-natural-gas.aspx>

7 Rien Herber, June 2013, KNAW <https://www.knaw.nl/shared/resources/actueel/bestanden/20130612HerberKNAWshalegas120613.pdf>

8 EuroGas, "Natural Gas Demand and Supply: Long term outlook for 2030", Accessed November 2013.

www.dma.dk/themes/LNGinfrastructreproject/Documents/Market%20analysis/Eurogas%20long%20term%20outlook%20to%202030%20-%20final.pdf

9 European Commission, "Eurotom Supply Agency Annual Report" 2012 <http://ec.europa.eu/euratom/ar/last.pdf>

1.1 UKRAINE, STRANGLER BY GAS PIPELINES

The recent unrest in the Ukraine cannot be understood without analysing the role of natural gas pipelines in the country. The Ukraine currently has very little natural gas production of its own but it is the main transport route for Russian gas into the EU. In addition, Ukraine's important heavy industry sector currently demands a significant amount of gas.

The conflicts between Russia and the Ukraine over gas – since the breaking up of the Soviet Union – centre on several issues: transfer fees, pricing, debts, infrastructure ownership, and domestic use in the Ukraine. In the 1990's the Ukraine paid just \$50 per 1,000 BCM which was far below market prices. At that time Russia provided approximately a quarter of the natural gas consumed in the European Union; approximately 80% of those exports travelled through pipelines across Ukrainian soil prior to arriving in the EU.¹⁰

A serious dispute over the price of supplied natural gas and transit costs began in March 2005. During this conflict, Russia claimed Ukraine was not paying for gas, but diverting it from the pipelines. The Ukrainian government admitted that the gas, intended to be exported to other European countries, was retained and used for domestic needs. The dispute reached a crescendo on the 1st of January 2006, when Russia cut off all gas supplies passing through Ukrainian territory. On the 4th of January 2006, a preliminary agreement between Russia and Ukraine was achieved, and the supply was restored. The situation calmed down until October 2007 when new disputes began over Ukrainian gas debts.

This led to the reduction of gas supplies in March 2008. Later in the same year, the relations became tense again when the Ukraine and Russia could not agree on outstanding debts owed by the Ukraine. In January 2009, this disagreement resulted in supply disruptions in many European nations, with 18 European countries reporting major drops in or complete cut-offs of their gas supplies transported through Ukraine from Russia. In 2013 the Ukraine paid \$421.7 per 1,000 BCM for gas from Russia, \$388.6 for gas from Germany and \$406.6 for gas from Hungary.¹¹

¹⁰ http://en.wikipedia.org/wiki/Russia%E2%80%93Ukraine_gas_disputes

¹¹ http://en.wikipedia.org/wiki/Natural_gas_in_Ukraine

The current crisis started with the former Yanukovich government cancelling a deal with the EU in favour of one with Russia. At the heart of this contract was an arrangement to solve Ukraine’s gas debt with Russia negotiating a lower gas price. After Yanukovich was ousted, this deal was off the table. Russia demanded repayment of its gas debt and raised gas prices by 80%, while suggesting Russia would only supply gas after being paid upfront.¹² In a counter-move German energy company RWE and Polish pipeline operator Gaz-System began to redirect gas to the Ukraine in order to boost supplies during this current diplomatic crisis.¹³ As a result, Russia’s plan to circumvent the Ukraine and Belarus with new pipelines is under pressure. Talks between Gazprom and the European Commission on the South Stream pipeline have been delayed. At the same time Bulgaria and Austria still support the project and signed a deal to link South Stream to the Austrian Baumgarten gas hub (now Central European Gas Hub). If the South Stream project is built on schedule as early as 2019, Russia will no longer require the Ukraine and Belarus to transport gas.

Map 2: South Stream – links Russia with Europe via the Black Sea, scheduled to be operational for 2015

Wikipedia, San Jose (CC BY-SA 3.0), http://en.wikipedia.org/wiki/South_Stream



12 <http://uk.reuters.com/article/2014/04/04/uk-ukraine-crisis-gas-idUKBREA330C520140404>
13 <http://www.reuters.com/article/2014/04/15/ukraine-crisis-gas-rwe-idUSL6N0N71S520140415>

Neither the Yanukovich government nor the current government in Kiev has a plan to solve the diplomatic gas crisis. Being dependent on imported gas coupled with the geographic location between Russia and EU, the Ukraine is vulnerable to outside political pressure. Russia recently used its political influence with its Ukrainian allies for a contract extension to lease the Naval base in Sevastopol. At the same time, the current government has negotiated an economic agreement with the EU and the IMF to restructure the economy with a support package of \$17 billion over the next two years, allowing more EU influence inside of the Ukraine.¹⁴ Part of the IMF plan is to reform, likely privatise, the Ukraine's state-owned energy company in addition to raising gas prices. It is unclear if the current unrest will allow the implementation of this plan.

Europe is Russia's biggest client with a whopping 76% of all Russian gas sold to Europe.¹⁵ In addition, Gazprom and other Russian oil and gas companies have made considerable investments in European oil and gas infrastructure over the last years. However, the on-going tensions between Europe and Russia have prompted the EU and its Member States to rethink energy ties with Russia. Roughly 70% of Russian gas is sold to Europe transported via the Ukraine.¹⁶ Russia declared that for the time being it would continue to send gas via the Ukraine; however Russia has made clear that this would depend on the repayment of Ukraine's gas debts.

Europe's reaction has been mixed. Several member states, particularly Germany, do not want to add pressure on the relationship with Russia. Pressured by the US, the EU supports sanctions, but also lobbies to soften them. At the same time the European Commission has started to make plans to reduce its dependency on Russian gas in the near future. In a first press release on the 6th of May 2014 the joint energy ministers declared that the EU is looking into several options.¹⁷

"We intend to promote a more integrated LNG market, including through new supplies, the development of transport infrastructures, storage capacities, and LNG terminals. We support the opening of new routes to supply energy, in particular the Southern Corridor, as a route for possible other sources of supply for Europe. We will further promote flexible gas markets, including relaxation of destination clauses and producer-consumer dialogue. Energy security must include timely investment to supply energy in line with economic developments and environmental needs.

14 IMF press release on Ukrain aid <http://www.imf.org/external/np/sec/pr/2014/pr14189.htm>

15 EU Russia Energy Trade, Eurostat http://ec.europa.eu/energy/international/bilateral_cooperation/russia/russia_en.htm

16 EU Russia Energy Trade Eurostat http://ec.europa.eu/energy/international/bilateral_cooperation/russia/russia_en.htm

17 Press Release: G7 ROME ENERGY MINISTERIAL MEETING ROME G7 ENERGY INITIATIVE FOR ENERGY SECURITY JOINT STATEMENT, 06 May 2014. http://europa.eu/rapid/press-release_IP-14-530_en.htm

Some investments in infrastructure, needed to increase security of supply, and that cannot be built according to market rules, could be supported by regulatory frameworks or by means of public funding.”

Several of the proposals in the declaration above will be difficult to fulfil; first and foremost extra LNG imports to Europe. Europe currently imports 60 BCM of LNG although there is more than 200 BCM in building and planning capacity.¹⁸ The LNG market is extremely tight; as a majority of exports are bought by several Asian countries who pay \$19 per mm BTU compared to for instance \$10 per mm BTU for Russian gas. Extra capacity of 2 BCM is currently being built in the US but will not be available before 2017 and will likely also go to Asia.¹⁹ Most of the other plans for extra LNG export capacity in the US only exist on paper.²⁰

Also unlikely will be the implicit push for shale gas. The current proposal will likely mean extra support for gas pipeline projects like TANAP (Trans-Anatolian gas pipeline) and East Med Pipeline (Israel-Cyprus-Greece) and will make the EU more dependent on unstable regions. In addition, further political support and more public money would be spent on infrastructure projects including: LNG terminals, pipelines and gas storage.

Photo 1: Natural gas pipeline from Russia to Ukraine

Wikipedia, Ghirlandajo (CC BY-SA)



¹⁸ EU quarterly report on gas markets Q1 2013 http://ec.europa.eu/energy/observatory/gas/doc/20130611_q1_quarterly_report_on_european_gas_markets.pdf.

¹⁹ LNG import/export terminals permits March 2014, <https://www.ferc.gov/industries/gas/indus-act/lng/lng-approved.pdf>.

²⁰ Kurt Cobb (2014): Ukraine Crisis: There is no US energy weapon, Christian Science Monitor, March 13, 2014. <http://www.csmonitor.com/Environment/Energy-Voices/2014/0313/Ukraine-crisis-There-is-no-US-energy-weapon>

1.2 INFRASTRUCTURAL LOCK-IN

In November 2010, the European Commission issued a set of objectives that would “redefine tools” for the Energy Directive by adopting the strategy document titled, “Energy 2020 for competitive, sustainable and secure energy.”²¹ The document outlines priorities for EU plans to develop a “single energy” market, in order to “effectively negotiate with international partners.” That same year the EC adopted the “Energy infrastructure priorities for 2020 and beyond – a blueprint for an integrated European energy network” which outlines EU priority transport corridors for increased supplies of electricity, gas and oil imports.²²

In 2011 the Commission adopted “The EU energy policy: engaging with partners and beyond our borders” communication. This agreement outlined key actions to expand fossil fuel infrastructure in order to ramp up and secure imports highlighting the earlier “Energy 2020” strategy to build a “stronger European energy market.”

Some key objectives include:²³

- 1) **New gas pipelines** for import and other infrastructures such as LNG terminals.
- 2) **Assistance to main oil and gas supplier** countries like Azerbaijan, Turkmenistan, Iraq and others, notably in the Central Asian region, to aid developing energy sectors abroad and build up related trade and investment with the EU.
- 3) **Administer the Trans-Caspian Gas Transmission** and Infrastructure between the EU, Azerbaijan and Turkmenistan to “pave a way for the construction of physical infrastructure for the supply of Turkmen natural gas across the Caspian Sea.”

21 European Commission Communication, “Energy 2020: A strategy for competitive, sustainable and secure energy”, 2010. <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52010DC0639:EN:NOT>

22 European Commission Communication, “Energy Infrastructure Priorities for 2020 and beyond – A blueprint for an integrated European energy network”, 17 Nov 2010. <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52010DC0677:EN:NOT>

23 European Council Directive 2009/119/EC, Journal L 265 9 Oct 2009, Pg. 9-23. <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=O-J.L:2009:265:0009:01:EN:HTML>

- 4) **Supply financing to rebuild Ukraine's Gas Transmission System.** The EU Commission affirmed that, "approximately 20% of the EU's gas supply passes through Ukraine. The EU must support efforts to rehabilitate Ukraine's Gas Transmission System, while improving transparency and the legal framework. It should aim at faster integrating Ukraine into the Energy Community."²⁴
- 5) High priority status is given to the **Euro-Asian Oil Transportation Corridor** to facilitate direct access to Caspian crude oil. "The stability of crude oil supplies through the Druzhba pipeline should be addressed in the energy dialogue with Russia..."²⁵ "The Baku Initiative and the Eastern Partnership Energy Security Platform, should remain key frameworks for regional energy dialogue between the EU and its neighbouring countries in the East, benefiting also from the support of the EU INOGATE programme."²⁶

Ongoing infrastructure development projects to bring gas from new supply regions have an important role in locking-in natural gas use. Plans to build new pipelines to transport gas from Russia, Central Asia and North Africa into Europe are currently underway and would link the EU with neighbouring fossil fuel resources.

The Nord Stream pipeline for example links the EU with Russia via the Baltic Sea, foregoing the Ukraine, and became already operational at the end of 2011.²⁷ Other routes are under construction or in the planning and subject to shadowy jousting between the European Union and Russia over the control of pipeline routes to Europe.

24 European Commission Communication to Belarus, "EU must speak with one voice on external energy markets, Commissions says", 2001. http://eeas.europa.eu/delegations/belarus/press_corner/all_news/news/2011/12_09_2011_en.htm

25 European Council Directive 2009/119/EC, Journal L 265 9 Oct 2009, Pg. 9-23.

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:265:0009:01:EN:HTML>

26 Ibid. The Baku Initiative aims to integrate the energy markets of the Caspian Littoral States into the EU market as well as the transportation of the extensive oil and gas resources towards Europe. See: http://ec.europa.eu/dgs/energy_transport/international/regional/caspian/energy_en.htm The Eastern Partner Energy Security plan will build infrastructure development, interconnections and diversification of supply, promotes energy efficiency and the use of renewable sources between the EU and Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine. See: http://ec.europa.eu/energy/international/eastern_partnership/eastern_en.htm The INOGATE program aims to build energy "co-operation" with eleven countries in Eastern Europe with the EU. See: http://www.inogate.org/index.php?option=com_content&view=article&id=46&Itemid=72&lang=en

27 European Commission Eurostat Database, Energy Production and Imports. Data from August 2012. http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Energy_production_and_imports

Map 3: The Nord Stream - Links Russia with the EU via the Baltic Sea, operational since 2011

Wikipedia, CC BY, By Samuel Bailey



One alternative is the Russian pipeline South Stream that will connect Russian and Turkmenistan's gas fields via the Black Sea with its Southern European customers. Pre-construction began in 2013; it is scheduled to be operational in 2015.

The competitor under construction is the Southern Gas Corridor – the proposed non-Russian pipelines between the Caspian Sea and Europe that links natural gas fields in Azerbaijan and Turkmenistan with the European gas network. It crosses Azerbaijan, Georgia, Turkey, Greece, and Albania up to the Italian coast and should be built by 2015. Gas to feed the Southern Gas Corridor pipelines will partially come from the Shah Deniz offshore gas field located in the Caspian Sea. Financing to extract gas from these fields has come from the European Bank for Reconstruction and Development (EBRD). It awarded \$180 million to the Russian oil giant Lukoil, and \$170 million to Azerbaijan state-owned company SOCAR. Another \$200 million was awarded to a subsidiary of Lukoil early in 2014 for further development of the offshore gas field.²⁸

²⁸ Law 360, "EU Bank lends \$200M to Lukoil for Caspian Sea Gas Project" 27 February 2014, <http://www.law360.com/articles/514006/eu-bank-lends-200m-to-lukoil-for-caspian-sea-gas-project>

Although the EU attempts to justify the development of these pipelines as “energy security” (when reducing dependence on Russian oil), the EU’s own development bank continues to finance Russian oil companies to supply gas to the new pipelines.

Photo 2: Shah Deniz offshore gas field in the Caspian Sea, Azerbaijan

Flickr, CC BY-NC-SA, by McDermott International, Inc.



The question is now, do we need all these new gas pipelines? Claire Dupont and Sebastian Oberthür (2012) show, that Europe is currently planning an overcapacity of gas import infrastructure. Europe imported in 2011, a total of 311 BCM of gas via gas pipelines, given a pipeline capacity to import 440 BCM. This capacity of 440 is more than sufficient to meet gas demand until 2050. Further, the EU has invested in the new North Stream pipeline between Russia and Germany (55 BCM) in addition to 274 BCM of Liquefied Natural Gas (LNG) terminal capacity, both existing and under construction now. Combined with other expansion plans total import infrastructure could grow to 825 BCM by 2020.²⁹ Even in the case that Russia would close down the gas pipelines through the Ukraine and Belarus with a joint capacity of about 180 BCM would still leave Europe with far more gas pipelines than necessary.³⁰

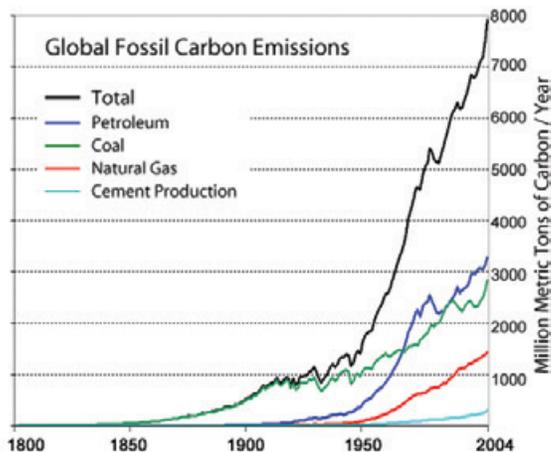
²⁹ Claire Dupont and Sebastian Oberthür (2012): Insufficient climate policy integration in EU energy policy: the importance of the long-term perspective. *Journal of Contemporary European Research*, Volume 8, Issue 2. <http://www.jcer.net/index.php/jcer/article/view-File/474/338>

³⁰ Eastern European Gas Analysis, Gazprom pipeline strategy, April 2013 http://www.eegas.com/exp_pipe_strategy-2013.htm

Gas pipelines are expensive and require long construction times, and pumping gas through a pipeline requires more energy than moving the equivalent mass of petroleum. A higher dependence on long distance gas imports means that the CO₂ imprint of each cubic meter of transported natural gas in Europe is rising. In addition, leaks during transport, which are almost inevitable, emit methane. Moreover, local gas production conditions in the countries of origin are crucial for the CO₂ imprint. Where gas production in Europe and North Africa is relatively clean, the Russian oil and gas industry is notorious for its outdated, leaky infrastructure. One cubic meter of Russian natural gas thus has a very different CO₂ intensity than a cubic meter of Groningen gas.

Graphic 1: Modern global anthropogenic Carbon emissions

Wikimedia, CC BY-SA 3.0, Mak Thorpe



Liquefied natural gas infrastructure (LNG) is different and also its CO₂ imprint. The lowering of the temperature of gas to make it liquid, and the subsequent heating to make it a gas again, increases the CO₂ intensity of LNG. LNG for overseas transport requires additional fuel for transport.

LNG terminals and power plants are built to last for 40 years or more. Investments

endanger the life of these projects slating them to either be stranded assets or to be written off; therefore causing a dependency lock-in. Although the EU in other policy fields bases its plans on the decline in natural gas use by -0.6% a year, it has calculated the investment in additional infrastructure with a continuous increase in the use of natural gas by 1.1%.³¹

Europe is dependent on LNG imports from Russia and North Africa, and may be in the future supplemented by gas from Central Asia and the Eastern Mediterranean. However, it is likely that the share of LNG remains relatively low for the short term, due to higher costs and competition with Asia. More than 90% of LNG imports to Europe come from Qatar, Nigeria, Algeria, Egypt and Trinidad.³² And although it is expected that LNG will increase in the future, LNG imports decreased by 31% in 2012 and by 24% in 2013, compared to 2011 levels.³³ This decrease could be due to competition from Asia and price differences through pipeline imports.

Photo 3: Gas tanker in Norwegian Fjord

Wikipedia, CC-BY-3.0, by Hannes Grobe



1.3 SHALE GAS IN EUROPE

³¹ Claire Dupont and Sebastian Oberthür, *Ibid.*

³² Gas LNG Europe: LNG terminals in Europe. GLE presentation to CEER LNG Workshop, Session I, 21.6.2011, http://www.ceer.eu/portal/page/portal/EER_HOME/EER_WORKSHOP/CEER-ERGEG%20EVENTS/GAS/1st%20workshop%20on%20access%20to%20European%20LNG%20terminals/GLE_LNG_Infrastructure_in_the_EU_CEER%20Workshop%20on%20LNG_20110906_final_0.pdf

³³ Reuters, European LNG terminals face idling, <http://www.reuters.com/article/2013/09/20/energy-Ing-europe-idUSL5N0HF3KD20130920>

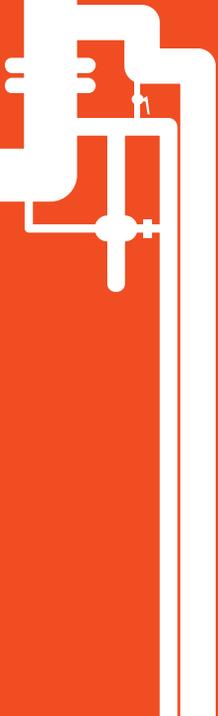
In the US, the shale gas boom, largely made possible through heavy public subsidies, slashed gas prices and boosted production. Many had hopes that something similar could happen in Europe, however this is currently unlikely due to European geology, a less developed oil industry and stricter regulations. And, as a result of this, in Europe, the cost of shale gas production is above the current market price. In addition, shale gas exports from the US in the form of liquefied natural gas (LNG) are not economically viable because of shipping and processing costs. Moreover, a solid and broad opposition to shale gas in Europe has grown in recent years holding an important political line against gas extraction (see Chapter 3).

EU Member States have established national regulations on shale gas extraction rather than regional policies. EU Parliamentarians however voted in October 2013 to make it mandatory for shale gas, shale oil, tight gas and coal bed methane extraction and exploration that involves fracking to be subject to Environmental Impact Assessments (EIA).³⁴ In addition to the many shortcomings of EIAs to prevent environmental and health damages, as seen with conventional fossil fuel extraction, the scope of the EIA in the EU law is limited to the 'fracking activity', and does not cover many of the preparatory activities, which would likely incur damage or risks to the environment and human health. Moreover, fracturing for gas and oil represent a significant threat to the climate, the environment and to local populations. This unconventional form of extraction will further lock the EU into fossil fuel use while emitting Greenhouse Gases (GHG) that contribute to associated health effects and climate change. A regulatory framework for shale gas is planned for 2014.

34 Health and Environment Alliance, "Fracking", <http://www.env-health.org/policies/other-issues/fracking/>

2 GAS PRICING SYSTEMS AND THE FINANCIALIZATION OF NATURAL GAS

competitive disadvantage with coal and renewable energy in the electricity market. For decades, gas trade was dominated by long-term contracts and price agreements – a logical consequence of the dependence of pipelines; both sides having large suppliers and large customers that are co-dependent. Historically, the price of gas has been linked to oil prices. This typically European pricing model is under pressure of reform. The increasing liberalisation of the energy market has led policy makers to consider using a spot market for gas in Europe. Supported by market leaders such as the Dutch Gasunie and various EU governments, a spot market would create a new financialization of the gas trade through speculation, hedging and derivatives.



2.1 OIL INDEXATION AND SPOT MARKET MODEL

Unlike the case of oil, a global market for natural gas is still in its early stages. With its own interconnected physical and market infrastructure, converting regional gas markets into a global market has proven to be a challenge. Each market region has its own dynamics and features, including fuel import dependence, which determines price formation. To date, the largest regional gas markets are found in the following regions: North America, Europe-Russia-North Africa, Middle East, Japan-Pacific, India-China.

Similar to other internationally traded commodity markets, natural gas has several regional benchmark prices. The dominant mechanism for the international gas trade, however, remains oil indexation, which originated in Europe in the 1960s and spread to Asia. Given the growing tensions in the oil market proponents' site, the need of a stand-alone gas market developed in order to guarantee safety of supply and investors' interests.

As a result, several governments aim to build a separate physical and financial infrastructure in order to de-link natural gas from the oil market; a contrasting mechanism based on "hub pricing" and market trading (a spot market model including its related futures market) developed in the United States that spread to continental Europe via the UK. Today, Europe is witnessing an unprecedented collision between these two pricing mechanisms and gas industry cultures, where regional gas markets have become interconnected through larger pipelines to other continents and the possibility to transport liquefied natural gas (LNG) overseas.

2.2 THE FINANCIALIZATION OF NATURAL GAS

The two models manage the gas market infrastructure quite differently regarding balance and price formation between supply and demand. The oil-index model regulates storage access and use by fulfilling strategic reserve needs. The balance is centred primarily on storage and related long-term import contracts, and wholesale price is only partially negotiated in open markets. However, in the case of the spot market model, storage is open to all operators, including speculators, which use the balance functions according to a pure market logic, therefore, price formation becomes changeable at any time within a gas exchange.

This second spot market approach requires a significant transformation in many of the existing physical market infrastructures in order to make the gas a commodity, tradable at any time and any place. This model has been prioritised in the United States. The creation of a spot market is further a sine qua non condition for the development of a financial market built on the physical market of natural gas, regarded as a commodity. In short, this second approach opens the way for the “financialization” of gas as a commodity.

The European Union remains split between the two different approaches and a two-tier pricing system has now emerged. Currently, about half the gas consumed in Europe comes at market or hub prices, and the remainder, covered by long-term contracts, is still linked to oil. But the proposed marketization along the line of the US/Northern European model is already thought and structured as the key building block for the financialization of gas. The UK, the Netherlands and Belgium have begun developing a natural gas market in which price is set in gas-stock-exchanges or other trading platforms based on the spot market. On the contrary, long-term import contracts made sense in deals between monopoly producers and distributors. However they do not look so good now that customers can shop around for better prices and other supplies.

2.3 PERSPECTIVES ON EUROPEAN GAS PRICING SYSTEMS

At the moment the EU's third energy package, approved in 2009 and focused on building a more integrated internal European market for gas and electricity, is being implemented by Member States, despite some resistance and outstanding problems. European law aims to decouple gas pricing from oil, thus opening the way for the construction of an integrated spot market (and related futures market) throughout Europe. The model for gas pricing is expected to be agreed upon in 2014. Based on specific physical and financial infrastructure, the market would be developed to build a new integrated regional market.

Depending on which gas pricing model is chosen, significant changes will certainly affect Asia and North American markets. If the spot market model gains the upper hand in Europe, Asia will be the last remaining stronghold of oil-indexed pricing, possibly making it unsustainable. Alternatively, if oil indexation re-exerts its predominance in Europe, there is the prospect that spot prices in North America will be influenced by this model. Modifications to existing contractual arrangements could directly impact exporters that depend on gas revenue – including Russia, Algeria, Indonesia, and Malaysia. In sum, the price of gas in Europe – and the mechanism used to determine it – will not only impact European companies and customers, but also have profound implications for energy markets around the world.

Both gas pricing systems are problematic. A spot market and related futures market for gas in Europe is quite problematic, because it aims at consolidating the vision of gas as a commodity and its financialization. This will imply that gas market integration will allow primarily only a few private operators to gain profits from the physical gas market so that energy security depends on a pure market-based and often speculative logic.

At the same time the existing oil-indexed model, primarily centred on renegotiating long-term supply contracts through pipelines from Eastern Europe, Central Asia and Northern Africa is equally problematic because it will similarly fuel further extraction of gas and delay a just energy transition to a democratic, social and “green” energy system.

In both cases most of the natural gas used in Europe will continue to be imported from conflict zones where environment, social and human rights are impacted by gas extraction and transportation operations.

Many still argue whether it will be possible to build a fully integrated gas market, due to the required use of regional blocks, based on financialized models for further integration. The transition to the financialized model would require a massive effort aimed at interconnecting the physical and the financial infrastructure, as in the oil market. A more multipolar world and different financial centres today potentially do make such an effort harder, given that conflicts with different interests might emerge.

The financialization of gas and its market places an urgency to question gas as a transition fuel within the energy transition debate. Currently the debate is stuck between one financial mechanism and another; both problematic. New political spaces and debates are necessary in order to put forward a proposal on decommodifying energy and thus advancing an authentic socio-ecological transformation of the economy and society as a whole.

The plans of the EU to increase interconnections of existing and new energy infrastructure to establish a competitive “single energy market” for Europe will arguably move towards greater energy consumption and fossil fuel imports. Through “interconnectivity” of markets and infrastructure, the EU clearly admits its intention of expanding fossil fuel use, contradicting its plan to reduce emissions by 20% by 2020 or 80% by 2050 based on 1990 levels.³⁵

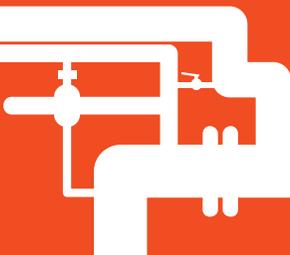
35 European Commission, Climate Action, “Roadmap for moving to a low-carbon economy in 2050”, accessed 2 November 2013. http://ec.europa.eu/clima/policies/roadmap/index_en.htm

3 RESISTANCE TO NATURAL GAS

Many institutions such as the European Commission as well as fossil fuel industries and some environmental groups consider natural gas as a clean transition fuel, as a bridge between today's fossil fuel dominance and the sustainable energy technology of the future. Proponents claim that in order to phase-out coal-fired power plants, the cheapest and quickest alternative would be using the overcapacity of gas fired power plants. They claim that it is easier to combine gas fired power plants with a grid dominated by intermittent wind and solar energy than coal or nuclear plants. The second step would be to phase-out natural gas. But this approach would unfortunately allow the EU to count gas as a share of renewable energy, which it is not. The EU claims that phasing-out gas this way would be a cheap and quick way to achieve lower CO₂ emissions.

However, phasing-out natural gas is coupled with phasing-out oil and there still remains no effective policy in place to phase-out oil and gas – not in the Member States and not at the EU level. Current investments in additional gas infrastructure cannot be combined with a climate policy focused on the phasing-out of fossil fuels.

Thus not everyone is convinced that gas should be treated as a transition fuel. Partly this is so, because spending billions for projects to build new gas infrastructure that would be abandoned in a relatively short period of time is seen as a waste of public money. But central to the debates and campaigns and resistances of social and environmental movements in Europe are the negative consequences from gas exploration, gas transport, gas flaring and the use of natural gas. At the moment these struggles are unfortunately seen as isolated issues.



3.1 THE STRUGGLE AGAINST SHALE GAS FRACKING

One of the key environmental struggles in Europe today is the continuously growing fight against controversial shale gas fracking. Several countries have already banned fracking, while plans for drilling in the UK, Netherlands, Bulgaria and other places have provoked mass protest. One example of resistance is the village of Zurawlaow, Poland, where Chevron's drilling plans were blocked by local farmers under the banner of Occupy Chevron.³⁶ In Pugensti, Romania, Chevron needed the help of a mass police presence as local resistance grew more militant, pushing the struggle into the international arena.³⁷ And in the UK several 'protection camps' supported by groups like Frackoff³⁸ and No Dash for Gas³⁹ have sprung up in places where test drilling for shale gas has already begun.

All over Europe, local movements have mobilised people based on the negative impacts that shale gas drilling would have on community health, water pollution, and land rights. But shale gas resistance does not stop there. Both environmental groups and local communities have quickly developed a broader view on natural gas – seeing climate change as an important reason to halt that drilling, and calling for a phase-out of gas and supporting sustainable alternatives. The link between people involved in decentralised sustainable energy initiatives and resistance to shale gas is strong. Shale gas resistance is bringing the broader energy debate to people's doorsteps!

For many Europeans, impact of fossil fuel extraction has historically not been considered as a local threat; however fracking has brought the conflicts inside of Europe's borders. The fossil fuel industry in Europe is fighting back – promoting cheap fuel and jobs, and stating that gas is cleaner than coal. Future resistances to shale gas will hopefully take one step further into a much needed popular support for big changes in Europe's energy systems. Crucial to winning the fight against shale gas fracking might be gaining the support of organized labour in the energy intensive industries. The growing opposition could move the debate beyond just saying no to shale gas fracking and include saying goodbye to fossil fuels and nuclear power. Perhaps this could lead the debate towards wider discussions on climate change, questions around jobs in the energy intensive industries, power and democracy, and fuel poverty.

36 <http://occupychevron.tumblr.com/>

37 <http://frackoffromania.wordpress.com/international-solidarity/>

38 <http://frack-off.org.uk/>

39 <http://www.nodashforgas.org.uk/>

Photo 4: “Non au gaz de shiste” – No to shale gas

Wikipedia, CC-BY-SA-3.0, by Camster



3.2 THE TRANS ADRIATIC PIPELINE AND SOCIAL MOVEMENTS IN GREECE AND ITALY

Political opposition against the Trans Adriatic Pipeline (TAP) argues that government support for the pipeline is a massive bias in favour of foreign interests – pointing out the lack of transparency in transit fees, expropriation rules, the possible participation of the Greek state, the procedural details crucial for the operation of the pipeline, and the role of the Turkish state oil company TPAO. The opposition is further convinced that the TAP will not benefit local communities, nor ensure gas supply at low prices for the domestic market. The consortium building the pipeline hired the Dutch company Royal HaskoningDHV to buy local lands.

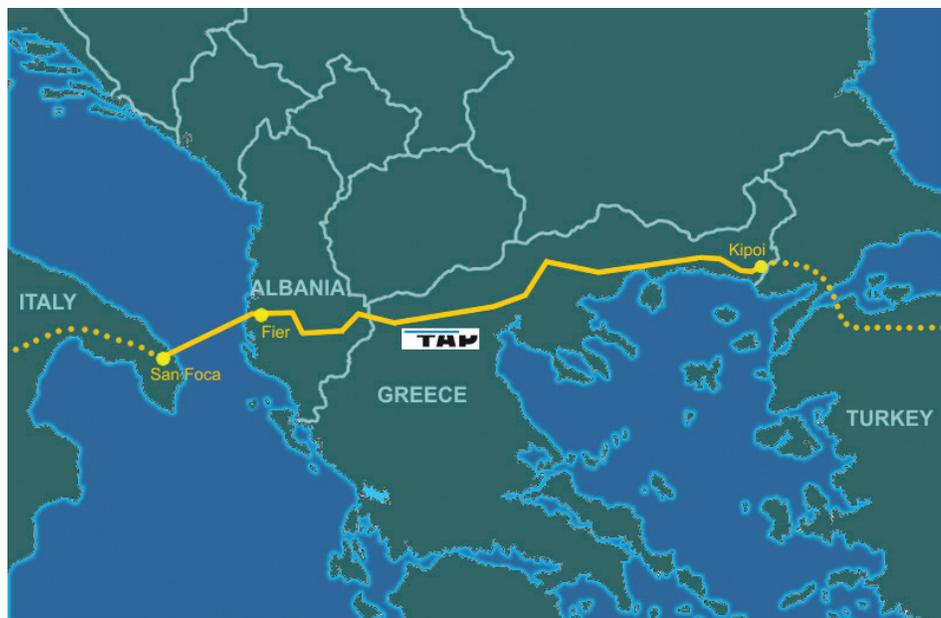
The pipeline further is opposed in Italy, where 20 municipalities voted for a motion to reject the project, and refused to negotiate with the government on an alternative route through land or sea. Protesters include local fishers and farmers, as well as thousands involved in small scale eco-tourism.

The economy of the region is based on the pristine environment that communities contributed to protect for centuries, and that would be spoiled if the pipeline is built. Local groups further fear the risks involved in building a gas pipeline in the seismically active area of Albania.

The international treaty between Italy, Albania and Greece in November 2013 has been heavily politicised in Italy with conflictual discussion between proponents and those in opposition of the project. Further, the EIA has received negative comments from local committees and environmental groups and from local authorities such as the Municipality of Melendugno (that have set up a commission of independent experts to review the Environmental Impact Assessment (EIA) and from the Puglia Region.

Map 4: Trans Adriatic Gas Pipeline

Wikipedia, CC BY SA, by Genti77



3.3 NATURAL GAS AND THE GERMAN ENERGIEWENDE

The German Energiewende is a critical European energy policy that aims to transform the energy landscape. Currently, almost 25% of electricity in Germany comes from renewable energy and of that 25%, close to 50% of the renewable power generated in Germany comes from small, privately owned producers (citizens, farmers and the like) not from major utilities.⁴⁰ The German plan for natural gas is viewed as a flexible 'bridge' fuel, able to fill the gap between intermittent solar and wind energy and constant energy demand. German policy mandates that the grid receives renewable energy before fossil fuel energy thereafter. As more intermittent renewable energy enters the grid it displaces the most costly type of fossil power generation, natural gas. As a result, natural gas generation decreased last year while coal's share of electricity rose from 43.1% to 44.7%, and lignite – a dirty form of coal – increased from 24.6% to 25.6%.⁴¹ Generators earn €14.08 a megawatt-hour per month from burning coal compared to a €14.67 loss from gas.⁴²

Germany's massive increase in solar and wind capacity has had a profound effect on the economics of conventional baseload power generation. There are 26 coal and gas-fired power plants slated for closure, explaining the stiff opposition to the Energiewende by large energy companies. German municipal utilities with legacy gas-fired plants are caught between high gas prices and low grid power prices. If Germany wants to prevent coal from eating up the benefits of the Energiewende it has to find a way to phase out coal plants and address its fossil fuel dependency. The difficulty will be doing this without an extreme rise in energy prices and hindering the transition to sustainable energy.

The small-scale locally operated renewable energy has engendered a sense of public pride and ownership. However, citizens are frustrated at the slow pace of transition by the utilities, which resulted in popular votes in German municipalities such as Hamburg and Berlin in 2013 to take back the grid. The future of renewable energy use in Germany is a crucial beacon to building sustainable power in Europe but how the country decides to end its dependence on the other 75% of fossil fuels should also be a key part of the debate.

40 Citizens own half of German renewables, Energiewende.de, 2013.

<http://energytransition.de/2013/10/citizens-own-half-of-german-renewables/>

41 Green Energy Bust in Germany, Dissent Magazine, summer 2013. <http://www.dissentmagazine.org/article/green-energy-bust-in-germany>

42 <http://www.smartplanet.com/blog/intelligent-energy/myth-busting-germanys-energy-transition/>

3.4 GAS STORAGE AND THE SPANISH CASTOR PROJECT⁴³

Building storage facilities for natural gas is happening everywhere in Europe right now. The Spanish Castor project demonstrates the risks that these facilities can have on the environment and the public.

Just offshore Valencia, Spain, an old oil field has been made ready for refilling. An offshore platform has been built to re-inject natural gas in the field, and pump it out again when needed. The storage could contain enough gas to supply the Valencian region for three months or 30% of Spanish daily gas consumption. In September 2013 the Spanish government ordered the operation to stop after it caused 220 earthquakes in only a few weeks. The urgency to halt the operation was made more critical due to the three nuclear power plants on the Valencian coast, Ascó I and II, and Vandellòs II.

Spain wants the court to cancel Article 14 in a concession signed in 2008 with the Escal UGS consortium, formed by ACS of Spain and Dundee Energy of Canada. According to the concession, in case of “external events” (like earthquakes, for instance) the companies can leave the project while government of Spain would have to acquire the shares and guarantee the debt holders. In this case, after the EC intervention with the Project Bonds Credit Enhancement initiative in July to refinance the project, the bond holders are responsible for an overall amount of €1.7 billion.

The public prosecutor in the Spanish city of Castellon has opened an investigation into potential criminal liabilities. The government has shut down development of the project indefinitely and asked scientists to look into the earthquakes apparently triggered by natural gas injections at the facility meant to store gas in a depleted oil reservoir next to a fault line.

⁴³ This section is reproduced from Re:common, “Project bonds threaten financial deal and produce earthquakes”, <http://www.recommon.org/eng/?p=3127>

In July 2013, the European Investment Bank and the European Commission hailed the first project to be financed under the Europe 2020 Project Bond Initiative. The honour of being the first such pioneering investment fell to the €1.7 billion Castor underground gas storage plant off Spain's Mediterranean coast. Welcoming the deal, European Commission vice-president Olli Rehn noted that "The project bond initiative is an innovative way to unlock private investment in infrastructure and a key element in helping to boost growth and jobs."

More prosaically, the initiative depends on public funds being used to improve the solvency of both companies and projects by allowing constructors to improve their access to credit for the financing of proposed projects – usually very large scale ones.

If Castor is scrapped then there are big uncertainties about who will foot the bill, especially under the new project bonds scheme. In conjunction with the European Investment Bank (EIB) €1.4 billion worth of these bonds were initially issued with a BBB+ credit rating. Ratings agency Fitch has since put the bonds on negative watch as a result of the suspension of operations, and has commented that it could downgrade the bonds if work is delayed beyond May 2014.

Of major concern for Spain's beleaguered taxpayers is that, under the terms of the project contract and a royal decree arranging the Castor concession, the Spanish government is obliged to reimburse the operator Escal UGS, owned by Spain's ACS and Canada's Dundee Energy. This compensation clause remains shrouded in some mystery and much controversy – Spain's Industry Minister José Manuel Soria has challenged the terms of the compensation contract at the Spanish Supreme Court, calling them "damaging to public interest," but the court rejected the appeal in a ruling.

The Castor project, on the planners' table for some years now, had simply not been an affordable investment for Escal USG under the project finance scheme, and it was not something that the Spanish government could afford to pay for due to the acute economic problems it has faced as a result of the financial crisis. The project bonds initiative was thus deemed to be an investment solution for Castor, another form of supposedly beneficial financial engineering that "should not generate a debt for the public coffers." Hence, the Castor project is demonstrating the opposite. According to an access to information request of July 2013 to the EIB, another eight energy and transport projects in six EU countries have been cleared by the EIB and the EC for project bonds medicine. If Castor is anything to go by, however, the project bonds approach could simply end up exacerbating Member States' troubled finances, and see huge project costs being dumped onto unsuspecting European taxpayers.

Because what is being attempted by the European Commission, with the assistance of Europe's public bank the EIB, is the transformation of infrastructure into an 'asset class', where clarion calls from the likes of Commissioner Rehn about the social and economic benefits of these major new projects conceal the extent to which the private sector is being offered a monumental leg-up with public money guarantees.

The scale of what is being attempted was further illustrated by energy commissioner Günther Öttinger's unveiling of the long-awaited list of "Projects of Common Interest" (PCI) for the years 2014-2015 published in January 2014. The Energy PCI includes a 248 project shopping list of energy infrastructure projects eligible for speeded-up EU funding to the tune of €5.8 billion in the next seven years, with the project bond mechanism expected to play a role alongside traditional EIB and EC financing.

The Castor project experience in Spain ought to make it abundantly clear that these high risk projects can, and most often do, pose a huge threat to the environment and people's lives. Indeed the EIB's due diligence for Castor remains a curiosity, though doubtless the bank would repeat its standard refrain that it operates at the cutting edge of environmental expertise. Environmentally and financially these type of projects present major risks, and thus, as commissioner Öttinger has made plain, they need public backing. The public, though, should not have to contend with financial and real earthquakes in return.

3.5 LABOUR UNIONS IN ENERGY INTENSIVE INDUSTRIES (SCOTLAND)

On the other side of the spectrum are labour unions in the energy intensive industries. As high gas prices are eating away the profits of these industries in Europe, unions see themselves confronted with demands for lower wages, threats of mass lay-offs and factory shutdowns. An example is the deal unions made with the owners of the Grangemouth petrochemical complex in Scotland.⁴⁴ The plant's owners wanted to close down the factories as declining resources from the North Sea and competition from cheap shale gas in the US made the complex economically infeasible in the view of the owners.

44 http://www.nytimes.com/2013/10/26/business/international/deal-with-union-prevents-closure-of-major-scottish-plant.html?_r=0

After the government promised financial support for new investments in the complex and the trade unions agreed with a freezing of wages, the complex stays open. In the short term this solution might work, but in the long run lowering wages and subsidies will not be able to keep up with higher gas prices. In some energy policy documents the trade unions see the need for a phase out of gas.⁴⁵ But what seems to be lacking is mobilising support among trade union members on the work floors for the steps that would be necessary to both keep jobs and transform current energy systems. After all, it will be the people on the work floor that both know best how to change their industry and will benefit the most from a just energy transition.

Photo 5: Grangemouth petrochemical refinery in Scotland

Wikimedia, GNU, by John



⁴⁵ <http://www.etuc.org/a/7952>

3.6 GRONINGEN GAS FIELDS TREMBLE (THE NETHERLANDS)

Local farmers occupied gas wells and shut in the Minister of Economic Affairs in a town hall with a tractor blockade and threats of sabotage at the beginning of 2014. No, this is not France or Greece, but the ever-calm Netherlands where the largest gas field in Europe lies.

The Groningen gas field contains 56% of all known European gas and is located in the extreme north-east of the Netherlands in a sparsely populated region with high unemployment and a sinking feeling of being left behind the rest of the Netherlands.⁴⁶ As a result of dropping pressure in the gas field from extracting gas in addition to the sandstone formation becoming compacted, earthquakes have become more frequent and the land surface is sinking. Initially the government and operators, Shell and Exxon, denied that there was a direct link between the rate of production and the increasing earthquakes. In 2013, the mining supervisor warned of the risk of earthquakes saying they would occur more frequently and would be larger than previously thought advising to slow down gas production to 40%.⁴⁷

The Dutch government decided to study the impacts for a year and ultimately did nothing, angering the local communities. There has always been resistance to the gas in the region, but more recently local communities have spoken out about the miserable way in which damage to homes by earthquakes and sinking lands were reimbursed. There is also a deep-rooted feeling of injustice whereby the big cities in the west of the Netherlands benefit the most from the proceeds of the gas, while the area itself is very poor. In 2013, local protests grew louder, bigger and more militant.⁴⁸ At the same time Shell and Exxon announced that 2013 had seen record gas production. The situation completely ignited when a large aluminium smelter in the area went bankrupt. The owner and the unions claimed that rising gas prices were to blame. Perhaps an over-simplification of the facts but nonetheless the bankruptcy added oil to the fire. As a result, local action groups demanded less gas production, more money, jobs and compensation for the damage to their homes.

⁴⁶ http://en.wikipedia.org/wiki/Groningen_gas_field

⁴⁷ http://www.business-standard.com/article/pti-stories/netherlands-slashes-gas-production-after-quake-protests-114011800054_1.html

⁴⁸ http://www.business-standard.com/article/pti-stories/netherlands-slashes-gas-production-after-quake-protests-114011800054_1.html

In early 2014, the government decided to invest €1.2 million in the area and slow down gas production by 10%.⁴⁹ The Dutch government being a co-owner of the gas field has invoked its own problems. Although, natural gas produced €12 billion of revenue for the Dutch state, slowing down gas production creates budget conflicts and puts Dutch export commitments at risk.

Also Germany, Italy and Belgium depend on Dutch natural gas.⁵⁰ However, the residents of the area are not going to accept more cracks in their homes or living in constant anticipation of increasingly severe earthquakes. They cannot move because their homes are unsellable. So where the government hoped to calm the situation, protest is still growing.

At the same time an important discussion on ending fossil fuels is imminent. In 10 years' time, the Groningen gas field has been so depleted that even the Netherlands will have to import gas by 2023. How are the Dutch going to heat their homes and fill their treasury? Perhaps closing the tap sooner rather than later is not such a bad idea, although that might mean trouble for Shell, Germany, Italy and Belgium.

Map 5: Dutch gas fields (onshore and offshore) and the giant Groningen gas field

Wikipedia, CC BY SA, by MJSmit



⁴⁹ <http://www.naturalgaseurope.com/earthquakes-force-nam-to-reduce-gas-production-from-groningen-field>

⁵⁰ http://www.energydelta.org/mainmenu/energy-knowledge/country-gas-profiles/country-gas-profile-netherlands#reference-dbsource_1

CONCLUSION

Critically, there is a need for wide public discussion and debate that challenges the environmental and social impacts inherent in massive natural gas expansion, both through physical and market-based infrastructures. There is a need to scrutinize the politics behind natural gas in particular, selling gas as a 'transition fuel' and a renewable energy resource and an increased dependency on natural gas imports. Parallel to this is a necessary emphasis on seeking out strategic partnerships towards building a common vision to phase out natural gas. Failing to do this will lead to accelerating climate change and more injustice on a global level particularly for 'fenseline' communities living next to extraction and processing points.

We have argued that natural gas is not a transition fuel. Natural gas is not taking over the role of other harmful fossil fuels while the EU is currently planning an overcapacity of gas import infrastructure as gas consumption in the EU is currently dropping and capacity of existing pipelines are not fully used. To continue with the politics of extending the natural gas import infrastructure such as pipelines and LNG terminals, there is a risk of lock-in of gas use with all of its negative environmental and social consequences. With this the EU would clearly support the expanded use of fossil fuels and contradict its plan to reduce emissions.



New pipelines will lead to negative consequences along pipeline routes, including environmental destruction, infrastructure damage, landgrabs and spoilage to fishing grounds. In the production regions, the environmental problems cause health problems and inequalities. The pipelines further deepen the links between the EU and repressive regimes in North Africa, Russia, Azerbaijan and Turkmenistan. Increasing use of natural gas will neither lower energy prices in the EU nor address the growing independence on fossil fuels. Therefore continuing to rely on natural gas is a dead end street for Europe.

Further, the financialisation of gas and its markets questions gas as a transition fuel. Currently the debate of a European gas pricing system is stuck between one financial mechanism and another; both problematic. The decommodification of energy is necessary as a whole to fight energy poverty, stop climate change and move towards a transition out of the fossil fuel age. The decommodification of energy is a necessary step to combine the fight against energy poverty and the phase out of natural gas needed to stay below two degrees of global warming. This requires reopening the debate on liberalized energy markets. Confronting energy security, climate change and energy poverty should not depend on the market.

Natural gas is a fossil fuel that is promoted as a “clean” energy source and transition fuel towards a renewable energy system. In reality natural gas has a higher climate impact than previously believed; an impact that is rising with the growth of shale gas and LNG. Europe’s push for more natural gas infrastructure combined with financial developments around gas will lead Europe to risking a carbon lock-in resulting in more social inequalities. Therefore, natural gas should not be promoted a transition fuel, leaving the phase-out of natural gas in Europe still needing to be strongly and seriously addressed.

To address the phase-out of all fossil fuels, including natural gas, strong regulation and long-term planning is necessary. The plan should reduce demand for gas and replace it with a mix of renewable electricity, sustainable heat sources and above all energy efficiency. In addition, public funding should be steered away from natural gas infrastructure towards investments that lower gas and fossil fuel demands. But this is not just a technological project, ensuring that this happens in a fair and just way requires careful investigation and public debate. Ultimately, the question of natural gas infrastructure needs to be addressed from another perspective: What type of energy infrastructure will serve the energy systems and economic model(s) that we want to build?

The presented struggles show there is a necessity and a possibility to fight against fossil fuel expansion. Struggles against shale gas fracking in Europe, underground storage facilities in the Mediterranean, and pipelines in Greece and Italy are linked. The rising resistance is fertile ground for social and ecological change. Their analysis and understanding is incredibly valuable in shaping a future based on economic, social and environmental justice.

Strong coalitions and powerful campaigns built by community activists, trade unions and environmental groups are the best hope to build this critical debate on energy transformation. One activity would be to connect struggles that aim towards the phase-out all fossil fuels including natural gas that would develop strategies for an alternative energy system that is renewable, decentralized, socially just and democratic.

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