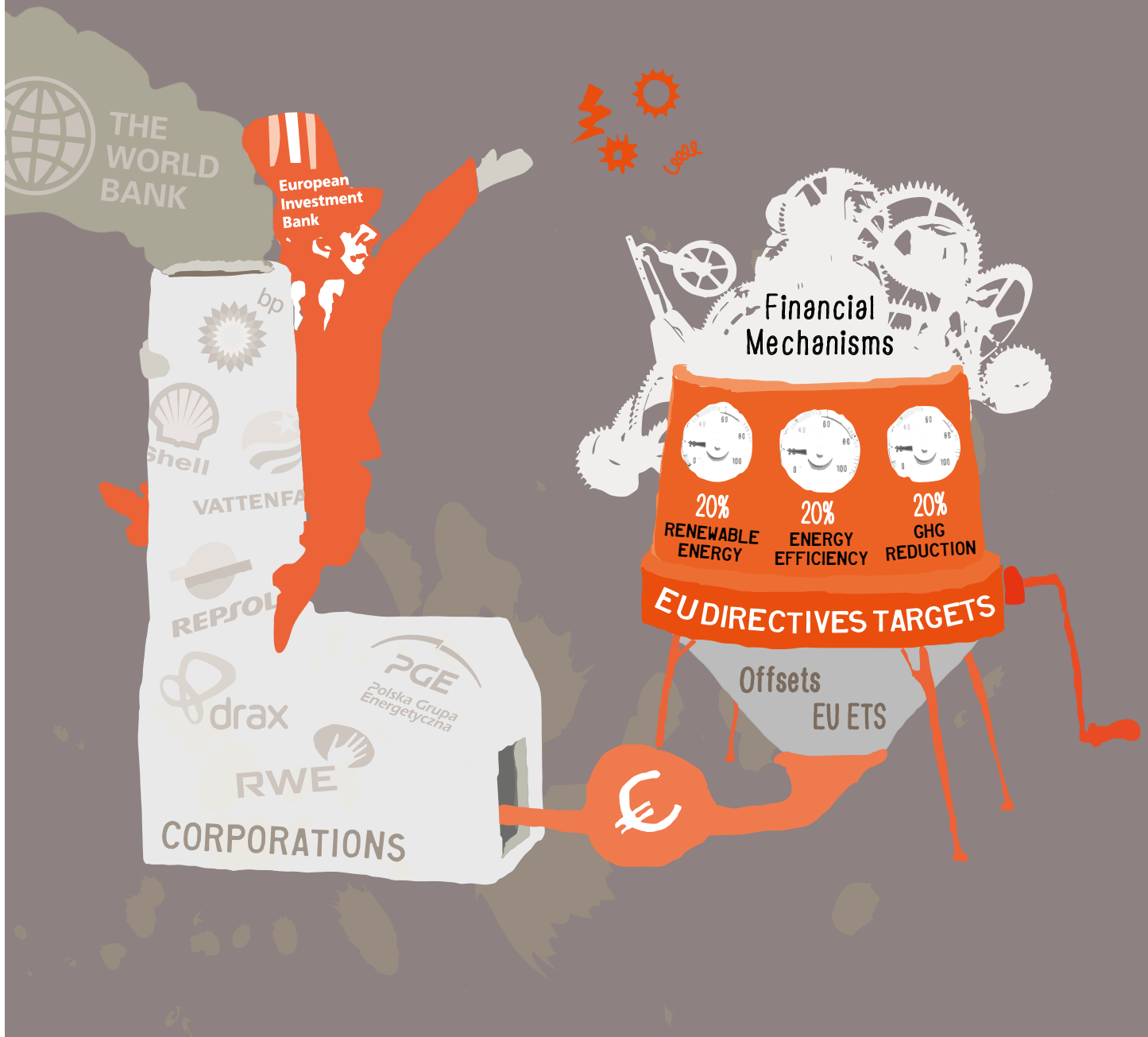


# EXTRACTIVE ENERGY

How the EU ETS exacerbates climate change



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## EXECUTIVE SUMMARY

Energy in the EU is dominated by fossil fuels. About 77% of energy used by the average European citizen is met by oil, gas and coal. Nuclear power provides an estimated 14%, with the remaining 9% coming from renewable energy sources. Set in the middle, the EU ETS is positioned as a tool to disguise these contradictions. Although setting targets may be well-meant for achieving emissions reduction goals, they become meaningless when looking deeper into the EU's energy agenda for the coming years. Plans to increase energy infrastructure are underway which will lock-in fossil fuel use in the longterm.

The 2020 Climate and Energy package includes a Carbon Capture and Storage (CCS) Directive, which creates a legal framework for the use of CCS technologies. Serious concerns around how CCS technology will function include emissions leakage from underground, seismic fractures, underground water contamination and a host of social problems for local populations. The emissions "captured, transported and stored" according to the EU ETS will be considered as not emitted ("carbon neutral").

According to the European gas industry, the EU's gas demand is expected to increase to 43% by 2030 compared to current consumption levels. On-going infrastructure development projects to bring gas from new supply regions have an important role in locking-in its use. Methane is a greenhouse gas at least 34 times more potent than CO<sub>2</sub> over a shorter 100-year period, and 86 times greater over 20 years.

Europe's use of coal spiked in 2012, particularly due to the expansion of lignite. Within the EU, 21% of the Joint Implementation (JI) offset projects are for the capture and utilization of coal mine methane. The most polluting installations in 2012 were Polish utility PGE's coal-burning Belchatów power plant, followed by two RWE plants and one operated by Sweden's Vattenfall in Germany, with the UK's Drax coal-burning installation in fifth place. Between them, these five facilities represent around 8% of total EU ETS permits through 2012.

While the EU bolsters the interconnection of existing and new energy infrastructure to establish a competitive “single energy market” for Europe, this will arguably lead to greater consumption and imports of fossil fuels implemented in part by various policy directives and backed by carbon markets. Plans for an estimated 40% increase in fossil fuel imports and increased extraction within the EU overrides emissions reduction targets even when taking into account plans to increase renewable energy and energy efficiency.

In addition to the multitude of European Investment Bank’s (EIB) investments in fossil fuel development projects, the bank is deeply involved in the carbon market through a range of carbon funds. The EIB has operated six key carbon funds worth a total of EUR 589 million in investments, several which are gas flare projects. At the time of writing, Russia has 182 JI projects in the pipeline, of which 53 are fugitive gas flare projects. Growing resistance against the notorious Russian oil and gas industry has become more visible despite high risks of criminalization.

Large oil companies in the EU not only use the CDM and JI to offset their pollution inside its borders but also set up projects abroad with their subsidiary companies allowing them to benefit from direct carbon credit sales by positioning themselves for easy purchase. Shell operates in Nigeria through four subsidiaries, primarily Shell Petroleum Development Company (SPDC). Through a long, sordid history it is one of the leading companies involved in gaining CDM credits through the carbon market by using gas-flare-to-power methodology. In 2012 a new Nigerian bill taxing the flaring at the same worth as the commercial sale was implemented but has not been enforced. Not only do carbon markets permit companies to pollute over their limits, they allow profit at the expense of local communities.

The Renewable Energy Directive (RED) follows from the Europe 2020 strategy, mandating differentiated national targets to increase the share of renewable sources to 20% of EU’s energy use and 10% of energy use in transport. This directive does not question extractivist policies that seek to remove increasing quantities of fossil fuels from underground, as well as the construction of further high-carbon infrastructure which would in turn lock-in fossil fuel use in the long term.

Coal plants can be adapted to run on a mix of coal and biomass, which allows utilities to evade environmental regulations, such as the Large Combustion Directive, and thus increase the lifespan of coal-fired power plants that do not meet new regulations.

By switching from coal to wood pellets as a fuel source, a utility can claim a 100% emission reduction, thus reducing the amount of EU ETS permits that it has to buy. In addition, the companies can profit by selling overallocated permits in the carbon markets.

The decision to cap first generation agrofuel use was deferred until 2015 recently by the European Parliament. Research in second-generation agrofuels production is being subsidized by the EU ETS, through the revenue of the NER300 funds, which come from auctioning 300 million permits to new entrants in the carbon market. So far, 200 million permits were auctioned, and funds over EUR639 million were awarded to “bioenergy” projects, including EUR 527 million for second-generation agrofuels, which will use wood, crops, straw and agricultural residues to produce energy for transports and industries.

Emissions from hydro energy are not accounted for in the EU ETS. The EU ETS also finances hydropower around the world through its linkage with the CDM. About 27% of all CDM credits are generated through investments in large dams and most are sold to governments and companies for compliance with the EU ETS. The “carbon neutral” label that is attached to CDM hydro projects allows the generation of carbon credits used by industries in the EU ETS for further production and use of fossil fuels.

Two solar parks and two wind farms are planned by Morocco for construction in the Western Sahara. The *Saharawis* were not consulted and oppose the occupation of their territory for these infrastructures, since the energy generated will be exported to Europe. The EIB also plans to act as an intermediary in future CDM credits deals, through its Morocco Carbon Capital Fund.

Presently there is an estimated oversupply of permits in the EU ETS of over two billion, yet the EU only approved a temporary set-aside of 900 million permits. This oversupply is reinforced by the possibility of using offset credits for compliance. In addition, unused offset credits can be swapped for permits until March 2015.

The fact is that if pollution is to be reduced, large amounts of fossilized carbon (carbon locked in a fossilized form such as coal, oil and gas) will have to be left underground. While the EU claims to be reducing emissions and addressing the climate problem, at the same time the EU creates policies that increase the main driver of climate change: fossil fuels.

## INTRODUCTION

At the most fundamental level, to meaningfully address climate change, industrialized countries must initiate new paths away from fossil fuel dependence. In this publication we aim to show how the European Union Emissions Trading Scheme (EU ETS), the key climate policy tool in the EU, was created to maintain and expand an economic system dependent on fossil fuels while scaling up the role of financial markets. The EU ETS feeds into mainstream debates around 'energy security', which are largely focused on the acquisition and 'protection' of new and continued supplies of fossil fuels.

Instead of discussing possible just transitions away from fossil fuels, EU climate policy expands fossil-fuelled capitalism through the use of carbon markets and, as a result, fails to address the root causes of climate change. Further, the EU ETS is used as a justification to open the way for new infrastructure that locks-in fossil fuel use in the long-term. Within this logic, the EU is primed to agreements that would establish new carbon markets and enlarge existing ones at international financial summits, including the UN climate negotiations.

It is imperative to start a rapid phase-out of fossil fuels if the already unambitious objective to limit global temperature rise to 2°C has even a remote chance of being achieved. Oil, gas and mining extraction, even when using the most 'state-of-the-art' technologies, will always be a dirty business. Fossil fuels are responsible for widespread violence and social conflict because they are embedded in a power system of economic and political relationships that serve to reproduce the logic of endless economic growth.

Within the EU, the sector generating the highest amount of greenhouse gases (GHG) in 2009 was 'fuel combustion' (74.6%) followed by 'energy industries' (28.8%).<sup>1</sup> Policies such as the EU ETS are not created with the objective to reduce pollution levels at source or ensure fair access to energy for all, but to capture new sources of accumulation. This is not an oversight or something that can be addressed by tinkering with the market; it is the business model.

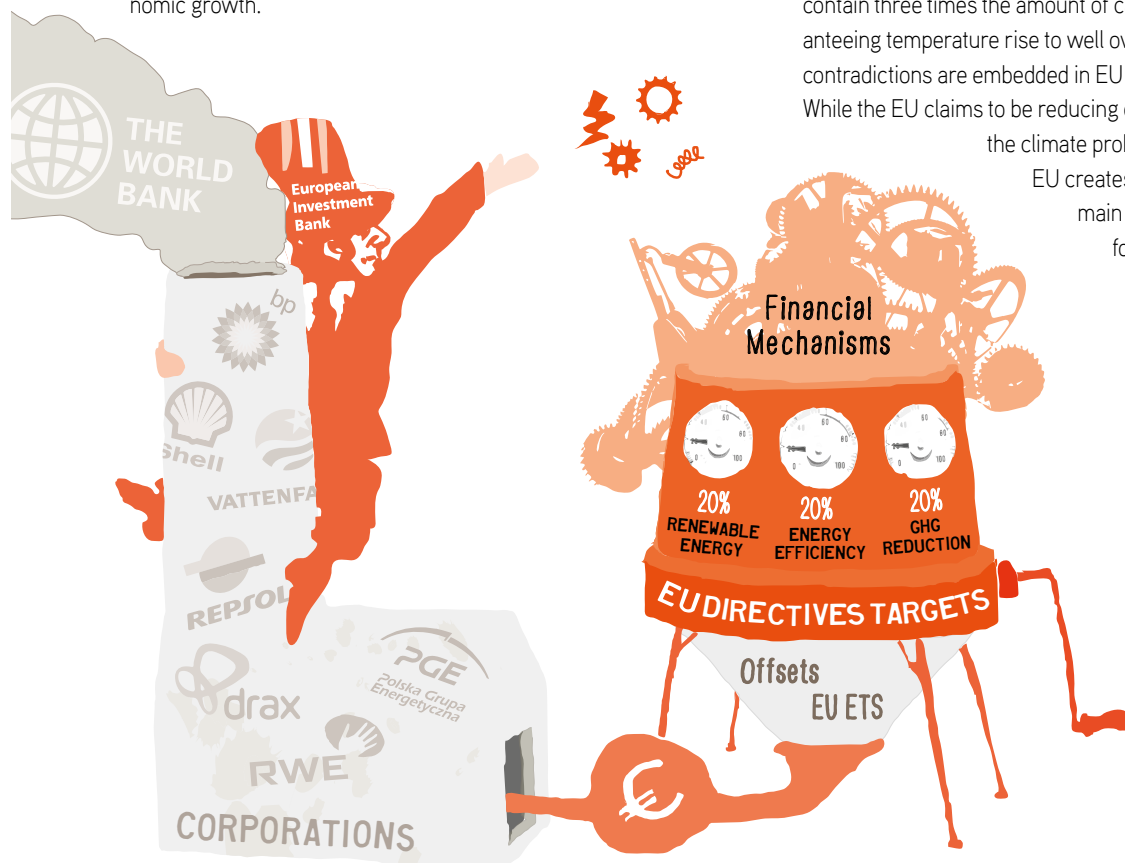
During the conference "Towards a Global Carbon Market" held April 2013 in Berlin, Germany, David Horne, the chief climate adviser of the oil-giant Royal Dutch Shell Company, presented on a panel and openly declared that a carbon market "offers an opportunity for the financial sector to contribute to the liquidity of the market."<sup>2</sup> After eight years of failing to reduce emissions in the EU while expanding profits for the most polluting companies, the EU ETS has allowed the expansion of dirty businesses inside the EU and abroad. As a result, the EU is culpable for destroying many diverse ecosystems, displacing local populations, and exacerbating climate change.

The fact is that if pollution is to be reduced, large amounts of fossil carbon (carbon locked in a fossilized form as coal, oil and gas) will have to be left underground. Once taken out of the ground and burned, coal, oil and gas add to the amount of carbon cycling in the atmosphere. In order to keep temperature rise below 2°C, phasing out fossil fuels is critical. Furthermore, according to the International Energy Agency's World Energy Outlook, total proven international fossil-fuel reserves already contain three times the amount of carbon dioxide (CO<sub>2</sub>) guaranteeing temperature rise to well over the 2°C level.<sup>3</sup> These contradictions are embedded in EU climate and energy policies. While the EU claims to be reducing emissions and addressing

the climate problem, at the same time the

EU creates policies that increase the main driver of climate change:

fossil fuels. Set in the middle, the EU ETS is positioned as a tool to disguise these contradictions.



## PART 1 EU ENERGY AND CLIMATE POLICIES ABSORBED BY THE EU ETS

“Energy is the key to politics”<sup>4</sup>

Poland’s Prime Minister Donald Tusk

Energy in the EU is dominated by fossil fuels. About 77% of energy used by the average European citizen is met by oil, gas and coal. Nuclear power provides 14%, with the remaining 9% coming from renewable energy sources.<sup>5</sup> Being increasingly a policy priority, energy constitutes one of the five main pillars of the Europe 2020 strategy targets. According to the EU Commission, the 20-20-20 targets represent “an integrated approach to climate and energy policy that aims to combat climate change, increase the EU’s energy security and strengthen its competitiveness.”<sup>6</sup>

The EU 2020 Climate and Energy Package, adopted in 2009, has three main targets aimed to be reached by 2020:<sup>7</sup>

- 20% of Europe’s GHG emission reductions in comparison to 1990 levels,
- 20% share for renewable sources in the energy consumed in the EU, with differentiated targets among Member States, and
- 20% savings in energy consumption. This last target is not legally binding for Member States, and the Climate and Energy Package does not address the Energy Efficiency target directly.

The 20% target related to GHG emission reductions is divided into two sub-targets attached to two policy packages:

### 1) The EU ETS

As the “cornerstone of the EU’s policy to combat climate change”, the EU ETS aims to accomplish a 21% GHG reduction target for emissions from the sectors covered under the EU ETS compared to 2005 levels by 2020. The EU ETS covers around 45% of total GHG emissions from the 28 EU countries.<sup>8</sup>

The sectors under the ETS include oil refineries, steel works and production of iron, aluminium, metals, cement, lime, glass, ceramics, pulp, paper, cardboard, acids and bulk organic chemicals, power and heat generation, and commercial aviation for CO<sub>2</sub> emissions; as well as nitrous oxide (N<sub>2</sub>O) from production of nitric, adipic, glyoxal and glyoxalic acids, and perfluorocarbons (PFCs) from aluminium production.

As a result of the many evident failures of the EU ETS, including the growing surplus of allowances, price collapses, and fraud scandals, the EU Commission has launched a plan to adopt “six structural measures” in a desperate attempt to fix the scheme.<sup>9</sup> In March of 2013 more than 140 organizations, networks and movements from around the globe demanded that the EU “Scrap the ETS” with a declaration “Time to scrap the ETS”

launched parallel to the EU Parliament votes on the EU ETS reforms, “Insisting on trying to ‘fix’ a system that is broken from the start diverts attention and resources away from just and effective policies... there is only one option possible with a clear climate benefit: to end the scheme once and for all.”<sup>10</sup>

### 2) The Effort Sharing Decision (ESD)

The ESD is used for setting a 10% emission reductions target from sectors not covered under the ETS compared to 2005 levels. Exempt sectors include: international shipping, aviation and Land-Use, Land-Use Change and Forestry (LULUCF), compared to 2005 levels. Each Member State has a differentiated national target according to its economic status. Less wealthy countries are allowed emission increases in these sectors to account for increased economic growth, which is likely to be accompanied by higher emissions.

Similarly to the EU ETS, the ESD 2020 targets can be partially met with offset (CDM and JI) credits. The use of offset credits is so generous and ESD targets so weak that overall, EU Member States are projected to accumulate a significant oversupply of ESD allowances and international offsets. Two thirds of the overall emission reductions under the ESD can be met through the use of offset credits.<sup>11</sup>

Furthermore, the ESD allows a Member State to transfer part of its unused international credits to another Member State. So the buyer country can use these entitlements to purchase further international credits above the 3% limit. The ESD also allows Member States to carry over surplus allowances in a given year to subsequent years. Member States can also sell their allowances to other Member States throughout 2013-2019.<sup>12</sup>

### From 2020, to 2030, to 2050: Locking-in pollution for the long-haul

In 2011, the EU Commission laid out the “Energy Roadmap for 2050.” This Roadmap was developed to suggest the objective of reducing GHG emissions by 80-95% by 2050 compared to 1990 levels. In order to achieve this, the scenarios in this Roadmap suggest:

- By 2030 GHG emissions would need to be reduced by 40% in the EU to be on track to reach a GHG reduction of between 80-95% by 2050, consistent with the internationally agreed target to limit atmospheric warming to below 2°C.
- For renewables, the policy scenarios in the Energy Roadmap 2050 indicate a share of around 30% in 2030.

Although setting targets may be well-meant for achieving emissions reduction goals, they become meaningless when looking deeper into the EU's energy agenda for the coming years. Plans to increase energy infrastructure are underway which will lock-in fossil fuel use in the longterm.<sup>13</sup> Considering that a coal-fired power plant has an estimated 40 year life span, plans for new power plants and upgrades guarantee more emissions. Energy infrastructure built today will still be in use up to and beyond 2030. EU policy makers are currently debating how the EU's Climate Framework for the period of 2020-2030 should function while the negotiations maintain the EU ETS as a key policy instrument.<sup>14</sup> European power lobby Eurelectric stated in the consultations that a stronger EU ETS "should be the main instrument"; while adding further European targets would risk "a continued reliance on multiple instruments, with an adverse impact on costs."<sup>15</sup>

Consensus regarding the need for a GHG emissions target for 2030 is clear but EU Member States are divided on renewable energy, and averting their eyes from an energy efficiency goal. An impact assessment into 2030 targets will be published at the end of 2013 but the assessment will likely only consider policy for reaching a 40% CO<sub>2</sub> target under the EU ETS. Consultations with 14 EU member states show a broad consensus that the ETS "should remain a central instrument."<sup>16</sup> In March 2013 the EU Commission adopted a Green Paper on a 2030 framework for climate and energy.<sup>17</sup> Member States are scheduled to decide on EU targets for 2030 in March 2014, taking into account the Energy Roadmap 2050.

If the EU ETS is the central instrument and energy infrastructure and financialization are expanded, targets for emissions reductions will be meaningless. This is because the logic behind the EU ETS allows, and even encourages, the extraction of remaining fossil fuels. In this way, carbon markets replace and undermine more effective regulatory measures and structural changes that might address fossil fuel dependency. After eight years of EU ETS, climate change problems have gotten worse. Polluters and financial investors have largely profited from the scheme gaining larger profits from speculative trading in derivatives; banks, consultants, brokers and conservationist NGOs have increased their trading businesses; and ultimately, the EU is expanding fossil fuels use, production and consumption, leading to the worsening of the climate crisis.

### Carbon Capture and Storage: Keeping the coal burning

The 2020 Climate and Energy package includes a Carbon Capture and Storage (CCS) Directive, which creates a legal framework for the use of CCS technologies.<sup>18</sup> CCS is an unproven technology, which claims to capture the CO<sub>2</sub> emitted by power plants and other industrial sources (either before or after burning), transport it through pipelines or ships to storage sites and store it underground in geological formations. The directive covers all CO<sub>2</sub> storage in geological formations in the EU and lays down requirements which apply to the entire lifetime of storage sites.

Serious concerns around how CCS technology will function include emissions leakage from underground, seismic fractures, underground water contamination and a host of social problems for local populations.<sup>19</sup> Furthermore, the technology is unproven and ultimately functions to keep coal fired-power plants burning. Just as the EU ETS helps sustain overall fossil fuels dependence, CCS sustains coal dependence, exacerbating climate change.

Mitigating local damage from CCS technologies is dealt with by using the existing Directive on Environmental Liability. However, liability for damage to health and property is left for regulation at Member State levels. Furthermore, barriers to CCS in existing waste and water legislation were removed. Also, an amendment was made to the Large Combustion Plants Directive to require an assessment of capture-readiness for large plants. The EU ETS includes CCS explicitly in Annex I countries.<sup>20</sup> The emissions "captured, transported and stored" according to the EU ETS will be considered as not emitted ("carbon neutral"). In other words, the EU ETS would cover over the fact that the power plants or other industries using CCS technologies were ever burning fossil fuels.

David Cameron made the argument himself back in 2007 as he announced that, "All existing coal-fired power stations should be retro-fitted with CCS, and all future coal-fired power stations should be built with CCS. If we do not do this, we will not meet our carbon emissions targets. Of course, today the technology is not yet fully in place. But that is not a case for inaction now."<sup>21</sup> CCS is so unproven and inefficient that several European projects are close to being abandoned.<sup>22</sup>

### Fossil fuel extraction within the EU

Polluting industries have received free excess 'pollution rights' to cover their existing emissions levels in the EU ETS, resulting in direct subsidies to the major polluters. In addition, the amount of fossil fuel subsidies within the EU remains high, particularly for coal.<sup>23</sup> The emissions "captured, transported and stored" according to the EU ETS will be considered as not emitted ("carbon neutral"). In other words, the EU ETS would cover over the fact that the power plants or other industries using CCS technologies were ever burning fossil fuels. As a survey from the carbon market analyst, Point Carbon, highlighted, even one in five emitters believe the ETS has no significant impact on emissions reductions.<sup>24</sup>

According to Point Carbon 2012 data, power sector emissions fell just 0.4% – a decline that marginally outstripped the contraction in the economy despite the restart of nuclear plants in central Europe. In Germany, emissions from the power sector surged 1.5%, more than double the country's GDP growth as generators switched to cheap coal. In the UK power sector emissions surged 7.4% compared to GDP growth of just 0.2%. In Spain, utility emissions rose 5.8% compared to economic growth of 1.4% after the country cut renewable subsidies and supported coal production instead. And in France, power sector emissions rose 9.4%.<sup>25</sup>

Meanwhile, according to the latest data from the EU Commission, the UK recorded the highest share in the EU with the extraction of crude petroleum and natural gas sector, while the Netherlands and Denmark were the next largest producers. Poland, Germany and the Czech Republic are the main producers of coal in the EU, respectively. The largest coal-fired power station in Europe is Drax, located in Yorkshire, UK. France is by far the largest producer of nuclear energy.<sup>26</sup>

The austerity policies enacted after the economic crisis across the Mediterranean have led governments to step up plans to exploit natural resources, regardless of the environmental costs. Mines are being reopened. Across the Mediterranean countries damaging domestic oil and gas exploration activities are being considered. Italy recently reversed a ban on offshore drilling, despite protests by coastal communities two years ago. Meanwhile in Spain, the government has abandoned policies meant to promote renewable energies through subsidies, while imposing a tax on renewable sources that makes the use of solar panels for self-consumption overly expensive.<sup>27</sup> What once was a policy that provided incentives for small-scale local renewable use into the grid, now punishes residents with a levy.

The Spanish and Moroccan governments are moving forward with plans to explore for petroleum near the Canary Islands despite opposition from the tourism industry and environmentalists in the archipelago.<sup>28</sup> Spanish company Repsol was granted the right to explore for oil about 60 kilometres from the coast of the Canary Islands in early 2002 as part of a consortium with Australian company Woodside and the German RWE (with respective participation of 50%, 30% and 20%). Seismic studies determined that oil likely lies in rock formations about 3,000 to 3,500 metres below the surface. This is in opposition to the local provincial government of the Canary Islands, that views oil as a potential threat to tourism, and “incompatible with the local economic model based on nature, landscape and biodiversity.” Recent surveys demonstrate that over 60% of the islands’ population does not support the oil extraction, with large demonstrations carried out in March 2012.<sup>29</sup>

On March 9, 2012, the Mario Monti government announced an end to a drilling ban with a speech titled, “A New Energy Strategy for Italy.” The ban had been put in place within five nautical miles of Italian shores and 12 miles within protected marine and coastal areas following the Deepwater Horizon oil spill in the Gulf of Mexico in 2010. At the same time, the Italian Prime Minister announced that the country needed to revive economic growth due to the crisis or Italy would fall deeper into recession. He stated, “A decisive move in this direction could allow us to activate **EUR 15 billion** in investments and **25,000 additional stable jobs**, reduce our **energy import bill** by over **EUR 6 billion per year** (thus increasing **GDP** by nearly **0.5 percent**) and gain **EUR 2.5 billion** in tax revenues on a national and local level.”<sup>30</sup> The majority of the oil and gas reserves are located in the Adriatic Sea and south of Italy. An estimated EUR 4 billion in capital expenditure is estimated to be sunk into oil and gas extraction benefiting oil companies including: ENI, Edison, MOG, Petroceltic and Shell.

Austerity policies have led to increased extractivism and weakened environmental regulations. This is particularly apparent in southern Europe where rolling back environmental protection measures due to the increasing economic crisis is becoming law. Additional examples include plans for Portugal’s Montemor gold mine set to go forward in 2014 and mounting pressure on the Greek government for oil and gas drilling to pay off the debt.<sup>31</sup>

## Shale Gas in the EU

According to the European gas industry, the EU’s gas demand is expected to increase to 43% by 2030 compared to current consumption levels.<sup>32</sup> Permanent fixed pipelines however are expensive and require long construction times, while pumping gas through a pipeline takes more energy than moving the equivalent mass of crude oil. On-going infrastructure development projects to bring gas from new supply regions have an important role in locking-in its use. EU countries are planning to build new pipelines to transport gas from Russia, Central Asia and North Africa into Europe; however, the region in fact faces a gas glut because of recent developments in the US. Hydraulic fracturing and horizontal drilling techniques have enabled shale gas to be extracted in large quantities possibly lowering US gas imports in the future.<sup>33</sup>

Gas is usually considered less polluting than coal or oil, however, uncertainty around the amount of methane that is intentionally vented and leaked during extraction, transport and distribution raises questions of the full climate change impact not accounted for in natural gas emissions calculations, and leaves open the possibility that the impact is higher than currently reported.<sup>34</sup> Methane is a greenhouse gas at least 34 times more potent than CO<sub>2</sub> over a shorter 100-year period, and 86 times greater over 20 years.<sup>35</sup>

EU Member States established national regulations on shale gas extraction rather than regional policies. EU Parliamentarians however voted on 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).<sup>36</sup> Besides the many shortcomings of EIAs to prevent environmental and health damages, as seen with conventional fossil fuel extraction, the scope of the EIA is limited to the ‘fracking activity’ itself, and does not cover many of the preparatory activities, which would also 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, emitting GHG that contribute to associated health effects and climate change. A regulatory framework for shale gas is planned for 2014.

There is not yet a global market for gas, unlike oil. 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 traded markets (*spot market model*, including its related *futures market*) developed in the United States that spread to continental Europe via the UK. At the moment the EU energy package, approved in 2009, focused on building a more integrated internal European market for gas and electricity, is being implemented by Member States. European law aims to decouple gas pricing from oil, thus opening the way for a financialised gas market through the construction of a spot – and related futures – market integrated throughout Europe. An integrated EU model for gas pricing is expected to be agreed upon in 2014.

## How Fracking Works

Hydraulic fracturing, or ‘fracking’, is the process of drilling and injecting fluid into the ground at a high pressure in order to fracture shale rocks to release natural gas and oil inside. According to the Fracturing Responsibility and Awareness of Chemical Act, each gas well requires an average of 400 tanker trucks to carry water and supplies to and from the site, and requires 1-8 million gallons of water to be mixed with sand and chemicals for creating fracking fluid. Approximately 40,000 gallons of chemicals are used per fracturing, including known carcinogens such as benzene, lead, uranium, mercury, methanol and others. The fracking fluid is then pressure injected into the ground through a drilled pipeline where the high pressure causes the nearby shale rock to crack, creating fissures. During this process, methane gas and toxic chemicals leach out from the system and contaminate nearby groundwater. Only 30-50% of the fracturing fluid is recovered, the rest of the toxic fluid is left in the ground. The waste fluid is left in open-air pits to evaporate, releasing harmful VOC’s (volatile organic compounds) into the atmosphere, creating more pollution.<sup>37</sup>

Below are a few examples of EU countries where shale gas extraction has boosted debates, moratoriums and strong resistance:

**Bulgaria:** The previous Bulgarian government imposed a moratorium on hydraulic fracturing in January 2012 due to strong mobilizations around the country.<sup>38</sup> Since then, the new Environment Minister Iskra Mihaylova, announced that she is in favour of shale gas exploration, yet after protests concerned about underground water pollution, she confirmed that the moratorium will be maintained.<sup>39</sup>

**France:** In 2011 the French government imposed a moratorium on hydraulic fracturing for shale gas due to continued local mobilizations. Several exploration licenses have since been revoked. However, in March 2012 the French administration published a report recommending the evaluation of shale gas resources in France and the development of scientific tests using improve techniques, with the clear intention to circumvent the law under the pretext of scientific research. On September 2012, President Hollande announced nonetheless to continue the ban and called for the revocation of seven outstanding permit applications for

hydraulic fracturing. The wording of the law does not clearly define fracking which has laid the ground for loopholes. Many companies have stated that they will “stimulate the bedrock” or other circumlocutions, so that the permits which should have been cancelled because of the law are still pending.<sup>40</sup>

**Germany:** The German Advisory Council on the Environment (SRU) advised caution against gas fracking in June 2013 stating that extracting shale gas through fracking is not essential for the German Energiewende, the energy transition plan borne from the decision to shut down nuclear reactors by 2022.<sup>41</sup> Gas has declined 10% in Germany since 2006 but gas still makes up about one-third of Germany’s total primary energy supply.<sup>42</sup> In addition, all gas is imported via pipelines. The energy debate is currently one of the hottest topics in Germany. “Natural” gas is being debated as a “transition fuel” that would be used alongside renewable energy in order to avoid more coal burning and for its ease of being turning on and off. However, proponents of “natural” gas rarely mention the environmental and social impacts of drilling for fossil fuels or acknowledge that extracting gas and oil usually come hand-in-hand.

**Poland:** As of April 2013, there are 109 concessions for shale gas in Poland, covering 88,000 km<sup>2</sup>, with 43 exploration wells, of which nine carry out hydraulic fracturing and four have horizontal sections, according to the Ministry of the Environment.<sup>43</sup> With the largest reserves among EU countries, the government affirms that there are no risks associated with “properly conducted” shale gas exploration.<sup>44</sup> However, local populations are strongly resisting the governmental push in order to “determine by themselves what is being done to their lands.”<sup>45</sup>

**Romania:** In March 2013, the Prime Minister announced that the one-year moratorium on shale gas exploration had been lifted. Energy company Chevron holds a number of concessions in Romania and has announced plans to begin exploration in late 2013, early 2014. National corporation Petrom is also conducting preliminary analyses of its concessions. Despite the thousands of people taking the streets to protest against shale gas plans<sup>46</sup>, the government has come out in support of fracking, citing energy “independence” and a decrease in the price of gas as motivations to pursue this avenue.<sup>47</sup>

**Spain:** The most advanced shale gas exploration projects in Spain are located in the Basque-Cantabrian basin. Exploration and development of shale gas fall under the competence of the autonomous communities or the central government if the permits cross various regions. The Government has repeatedly voiced its support for shale gas exploration.<sup>48</sup> In April 2013 however, the autonomous community of Cantabria passed a law to ban the use of hydraulic fracturing in the region.<sup>49</sup> The regions of La Rioja and Navarra have also banned the use of hydraulic fracturing. In the Basque Country, the new autonomous government halted the exploration of deposits in the region, due to environmental resistance, where plans for extracting gas have been understood as a direct threat to agriculture and rural livelihoods.



**UK:** A Committee from the UK government stated in 2011 that there was no evidence that hydraulic fracturing posed a direct risk to underground water and concluded that a moratorium in the UK “is not justified or necessary.”<sup>50</sup> To date, there are a total of 334 landward licences awarded for onshore petroleum and gas exploration.<sup>51</sup> The UK Energy Minister, Michael Fallon, stated that “[shale gas] will provide a welcome boost for communities who will host shale exploration.”<sup>52</sup> However, anti-fracking protests in the UK stressed both local pollution impacts and the potential to divert investment away from renewable energies.<sup>53</sup> Further, Greenpeace has started a legal challenge to shale gas in the UK sustaining that drilling horizontally under peoples’ land is illegal without the owner’s permission and property holders can block drilling.<sup>54</sup>

### Coal in the EU

Europe’s use of coal spiked in 2012 particularly due to the expansion of lignite. Coal consumption in Europe grew by 3.4% per year, higher than the global average of 2.5% growth.<sup>55</sup> It is the most widely used source of energy in energy-intensive industries and in the development of infrastructure. According to the World Coal Association, day-by-day decisions within the energy sector in Europe prove that unavoidable decline or phase out of coal “remains in the sphere of rhetoric, not reality.”<sup>56</sup>

Within the EU, 21% of the Joint Implementation (JI) offset projects are for the capturing and utilization of coal mine methane. Typically the projects extract the methane directly from coal mines to be burnt to generate power.<sup>57</sup>

### Germany and coal

The Germany energy transition (*Energiewende*) aims to generate at least 35% of its electricity from renewable sources by 2020; and 80% by 2050.<sup>58</sup> The country passed a 2011 decision to close nuclear power plants by 2022 which combined with low carbon prices and high natural gas prices has meant that domestically produced lignite is filling the gap.<sup>59</sup> Monthly electricity bills for German consumers include a litany of “shared costs” that are split by all households to fund the *Energiewende*, resulting in some of the highest electricity prices in Europe. Heavy industries are currently exempt from paying the surcharge.<sup>60</sup> Ironically, following its decision to abandon nuclear power, Germany had to import nuclear-generated electricity from France and Czech Republic.<sup>61</sup> Lignite, a dirtier, low-grade form of coal, supplied 25.6% of Germany’s electricity in 2012, up from 22.7% in 2010. Hard black coal supplied an additional 19.1% in 2012, and it is also on the rise.<sup>62</sup>

As a result, many companies are rapidly switching from gas to coal. Although the *Energiewende*’s goal is to reduce CO<sub>2</sub> emissions, Germany’s CO<sub>2</sub> emissions rose in 2012 as coal-fired power plants became cheaper to operate than gas.<sup>63</sup> Thomas Bareiss, a member of Germany’s parliament and the energy policy coordinator of the ruling Christian Democratic Union party, affirmed that “Lignite will surely play an important role for our energy mix over the next two or three decades.”<sup>64</sup>

The energy-giant RWE, the biggest user of coal in Europe, generated 72% of Germany’s electricity from coal and lignite in the first nine months of 2012, compared with 66% over the same period in 2011. RWE is building a new coal-fired plant in Hamm, in North Rhine-Westphalia and another in Emshaven in the Netherlands. E.ON, Germany’s biggest power producer, is also building a new coal-fired plant in North Rhine-Westphalia. Vattenfall, a Swedish state-owned company, has just completed a lignite-fired plant in eastern Germany and is building a coal plant near Hamburg. EnBW, based in southern Germany, is building a coal-fired plant in Karlsruhe, and another jointly with RWE in Mannheim.<sup>65</sup>

### UK and coal

In the first nine months of 2012, imports of US coal were up 73% from the same period in 2011.<sup>66</sup> EU’s Large Combustion Plant Directive, a set of regulations governing sulphur dioxide produced by burning coal and oil, is supposed to force coal and oil-fired power stations to either comply with certain emissions limits or shut down. However, research by Greenpeace recently suggested that some generators may try to prolong the life of their coal-fired power stations to take advantage of the cheap fuel. On the one hand, there are incentives for mixing coal with controversial imported biomass sources (see Chapter 3). And on the other, as coal burning gets more profitable, utilities will be encouraged to ditch any plans they may have had to shut their dirty power stations. Instead they may simply pay the Chancellor’s ‘carbon tax’ and fit the necessary technology in order to limit acid-rain causing pollutants and comply with the European directives.<sup>67</sup>

This would push UK’s emissions even further up, which is of little concern to producers since they face an insignificant cost for emissions. The UK government has stated that they will allow new “capacity payments” to be paid to old coal operators, meaning that taxpayers could also be directly subsidising the existing coal fleet operators, making coal burning even more profitable than it would be anyway.<sup>68</sup> Furthermore, there is a broad consensus within the UK government that the future role for coal has to be tied to CCS technology, leaving the door open for its continued and expanded use.<sup>69</sup>

### Poland and coal

Poland is the 10th largest consumer of coal in the world and produces 92% of its electricity from coal, according to the World Coal Association. Its energy strategy includes plans to increase energy production by around 40% through to 2030 with coal as the backbone of electricity generation. Two new coal mines are planned in the eastern region of Lublin in addition to Polish utilities exploiting new coal deposits.<sup>70</sup> Poland is planning to spend EUR 24 billion in the energy sector over the next eight years with much of that earmarked for 11,300 Megawatts of new coal plants.<sup>71</sup>

In addition, the Polish government has attempted to gain extra pollution allowances from the EU ETS for new and existing plants. The Court of Justice of the European Union however

rejected in March 2013 a legal challenge from the Polish authorities over EU rules on the allocation of free carbon allowances to industrial sectors deemed at risk of carbon leakage.

Eight of the Member States which have joined the EU since 2004 – Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Lithuania, Poland and Romania – have made use of a derogation (under Article 10c of the revised EU ETS Directive) which allows them to give a decreasing number of free allowances to existing power plants for a transitional period until 2019 instead of auctioning.<sup>72</sup> In 2012 the European Commission announced that Poland had provided documents proving the investment process at the contested plants had started before the end of 2008. As a result, these plants will qualify for free EU ETS allowances when they begin operating.<sup>73</sup> Between 2013 and 2020, Polish power plants are slated to receive free EU ETS allowances. Moreover, “direct compensation for electricity intensive industries is envisaged in the ETS Directive”, the authors stated in the report, “An Empirical Assessment of the Risk of Carbon Leakage in Poland”.<sup>74</sup> In other words, the Polish government is allowed to shield both its electricity and its industrial sector from any impact of the EU climate policy.

The most polluting installations in 2012 were Polish utility PGE’s coal-burning Belchatów power plant, followed by two RWE plants and one operated by Sweden’s Vattenfall in Germany, with the UK’s Drax coal-burning installation in fifth place. Between them, these five facilities generated around 8% of total EU ETS permits through 2012. Belchatów was also the biggest recipient of free allowances in 2012, followed by a ThyssenKrupp steel in Germany and the same two RWE German power stations.<sup>75</sup>

In the interests of propping up the coal industry, Poland is organising an “International Coal and Climate Summit” to run parallel with the United Nations Framework Convention on Climate Change (UNFCCC) hosted near Warsaw in late 2013. Poland’s Ministry of Economy and the World Coal Association (WCA) jointly issued the Warsaw Communiqué in September, proposing a “clean coal” strategy to fight climate change, relying on what it calls “high efficiency, low-emissions coal combustion technologies.”<sup>76</sup> The International Coal and Climate Summit is being hosted by the WCA but will take place at the Office of the Economic Ministry, which is endorsing the meeting. The UN summit will also

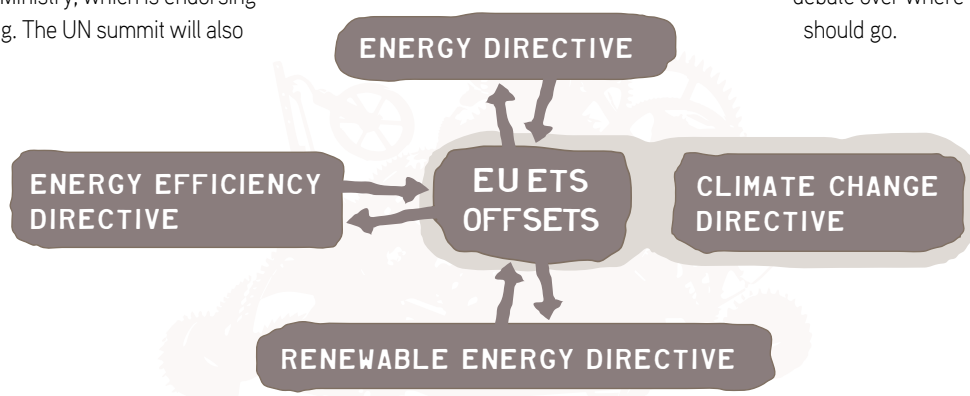
be sponsored by firms such as the steel giant Arcelor Mittal, which has enormously profited from carbon markets while causing damage to vulnerable communities;<sup>77</sup> Alstom, which plans to build the biggest coal power plant in Poland; PGE, Poland’s biggest energy company, with investments in coal, shale gas and nuclear; the oil company LOTOS S.A, which has led a bogus group promoting fracking;<sup>78</sup> and car giants such as BMW, which have been actively lobbying against CO<sub>2</sub> emission reductions for cars.<sup>79</sup> Warsaw’s coal and climate summit also received financial support from Peabody, the world’s largest private sector coal company and GE Mining and is being partnered with Euracoal, the European coal association.<sup>80</sup> The historical close linkages between polluting industries and the UN climate conference continue to give preferential awards to polluters in these negotiations.

### The “price signal” of the EU ETS

Common arguments supporting the recent spike in coal say that this is a very temporary shift driven largely by high gas prices, low coal prices and a rock-bottom carbon price from the EU ETS. The EU ETS carbon price should in principle go up when emissions do, as more emissions should increase demand for the carbon permits. However, as the failed system has shown many times, the price is no real signal for energy investments. It has remained flat for most of 2013 and it will most likely remain in this trend at least until 2020, which means that the EU ETS is effectively going against its own logic. Further, the EU ETS blocks any real actions that would reduce emissions at source and leave fossil fuels in the ground.

EU rules governing the third phase of the EU ETS (2013-20) “recommend” Member States to spend at least half of their carbon auctioning revenues on domestic climate change projects and in Southern countries. While Germany confirmed that all the cash will go to climate and energy projects, this includes investments in the controversial offsetting scheme Reducing Emissions from Deforestation and forest Degradation (REDD+) in Southern countries.<sup>81</sup> France and the UK have not yet formally disclosed their intentions. The UK’s energy and climate department has nonetheless stressed that there is no obligation to spend at least half of its EU ETS revenues on climate projects.

Poland on the other hand, is in the middle of an internal government debate over where the cash should go.



## PART 2 MARKETEEING ENERGY IN THE EU: OFFSETTING FOSSIL FUEL IMPORTS

### Introduction

It is no secret that the EU is largely dependent on fossil fuel imports. The EU is the largest net energy importing region in the world.<sup>62</sup> In fact, 26 out of the 28 Member States are net energy importers.<sup>63</sup> While the EU bolsters the interconnection of existing and new energy infrastructure to establish a competitive “single energy market” for Europe, arguably this will lead to greater consumption and imports of fossil fuels implemented in part by various policy directives and backed by carbon markets.<sup>64</sup> 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.<sup>65</sup>

At first glance it seems that the EU struggles to implement energy and climate policy that combine the interests of the 28 member states; while promising energy efficiency and renewable energy measures, and at the same time increasing fossil fuel infrastructure and subsidies and coal mining. Within this framework lie several apparent contradictions in EU policy regarding its bleak energy future. Policy-makers in Brussels get stuck on debating choices between fossil fuels and agrofuel energy, or decisions to develop unproven ‘clean coal’ and technological fixes in addition to emissions reduction targets that fatalistically lead to building new fossil fuel infrastructure. However, none

of these debates include the important discussion of an energy transformation that would leave fossil fuels underground.

Taking a deeper look into these policies reveals how carbon markets play a central role in expanding fossil fuel infrastructure by subsidizing polluters for further extraction while at the same time providing an escape hatch for polluters by avoiding any meaningful reduction in emissions. In the EU, the flagship policy to reduce emissions is the EU ETS which provides a market-based bypass for polluters, eschewing any meaningful action that would reduce fossil fuel use and ultimately reduce climate change. Moreover, the EU ETS renders any GHG reduction targets meaningless. This section will focus on the link between EU policy regarding energy imports and how the EU ETS encourages fossil fuel burning at rock-bottom prices while financing extraction and infrastructure globally.

### Expanding infrastructure for fossil fuels

By 2011, total EU energy dependency reached over 54%, making it the world’s largest net energy importer.<sup>66</sup> Estimates on energy dependency at this rate could reach 70% by 2030.<sup>67</sup> In 2011, oil imports reached a staggering USD 488 billion, slightly larger than Poland’s GDP.<sup>68</sup> In addition to the more than 85% oil and 65% gas imports, an astounding 97% of the uranium used in European nuclear reactors is mined abroad.<sup>69</sup>

### The Carbon Accounting game

If a set of climate policies consciously overlooks certain emissions, such as consumption related emissions, then little can be done to reduce emissions. More social and environmental damages are imposed on export-dependent countries, where most of the fossil fuels extraction and production of commodities occur, but the majority of the fuel is consumed by industrialized countries. Increased external fuel demand, outsourced carbon intensive production, transportation and financial transactions on estimated reserves, shuffles emissions and market prices up and down, expanding an economic system and power relations of domination among and within countries, as well as from corporate control.

The difference between a country’s extraction (where primary fossil fuels are extracted from the ground within a country), production (where fossils fuels are combusted within a country), and consumption (where products made using fossil fuels are consumed) of fossil fuels brings some fast growing ‘carbon gaps’.<sup>90</sup>

The extraction emissions in Europe for example are 67% smaller than its production emissions, since Europe is dependent

on fuel imports for two-thirds of the carbon it combusts.<sup>91</sup> Moreover, the EU ETS does not account for emissions from consumption; thus, the historic delocalization of industrial production to countries in the global South has also led to a transfer of emissions, a problem intensified by the EU aggressively pursuing free trade policies. One study published on the Proceedings of the National Academy of Sciences estimates that in some European countries, more than 30% of consumption-based emissions were imported, while emissions from China’s exports represent 22.5% of its total.<sup>92</sup>

Europe, Japan, and the US have historically outsourced a significant volume of carbon intensive production. When you count all the emissions from the goods and services Europe consumes, it is 20% larger than its production emissions.<sup>93</sup>

But these ‘gaps’ are not just accounting problems, they are political and economic decisions looking to maintain the current power structures and fossil fuel dependency in industrialized countries, while hiding behind ‘green’ and ‘sustainable’ discourses.

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, while Russia, Canada and Australia are the three largest suppliers of nuclear materials to the EU.<sup>94</sup> However, Russia is by far the largest fossil fuel supplier to the EU. Disputes with transit country, Ukraine, broke supplies in January 2009 which led to disruptions and cut offs in many EU Member States pushing the debate on energy 'security' to the forefront. Shortly after, the Council of the EU adopted Directive 2009/119/EC in response to the Russia-Ukraine gas crisis mandating Member States to stockpile supplies of crude oil and/or petroleum products.<sup>95</sup>

In November 2010, the EC 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."<sup>96</sup> 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.<sup>97</sup>

Furthermore, 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:<sup>98</sup>

- 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".
- 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

## Carbon Offsets, compensating what?

Carbon offsets are "emissions-saving projects" created to supposedly compensate for continued pollution in industrialised countries in the North. These projects are undertaken by companies, international financial institutions, conservationist NGOs, consultants, and governments. Offsets run in parallel with "cap and trade" schemes, in which the cap is supposed to set a limit on pollution for a period of time.

Under 'cap and trade' schemes governments or intergovernmental bodies, like the EU, give polluters a certain amount of permits to pollute (or 'carbon permits' or allowances). Companies can use these permits to reach their reduction targets, trade them in the EU ETS or bank them for later use. Carbon offsets break the 'cap' by providing extra 'credits' which permit pollution over and above this limit. At best, each tonne of carbon 'saved' in an offset project is by definition annulled by another emitted tonne of carbon allowed to the buyer. Such projects *do not reduce* any emissions, but instead allow the current economic system based on fossil fuels to remain untouched.

The majority of the offset carbon credits that have been issued are for infrastructural changes that would have happened anyway, such as the case with industrial gas projects. By 2012, over half of all credits issued in the CDM were set up to destroy HFC-23 or N<sub>2</sub>O. Some limits have been set by the EU but the

issue has not been resolved.<sup>99</sup> Renewable energies constitute over half of all of the projects issued in the CDM but the majority are large-scale hydroelectric dams and wind farms that harm local populations where the offset projects are implemented. Needing extensive extensions of land as is the case with the production of biomass or tree plantations as 'carbon stocks', offset projects have resulted in human rights and land violations, forced displacements, increase of local pollution and health problems, criminalization of social movements, among many more.<sup>100</sup>

The UN's Clean Development Mechanism (CDM) is the largest offset scheme with 7,289 registered projects in the South as of September 2013, and over 1525 further projects awaiting approval. Joint Implementation (JI) is the other key UN offsetting mechanism. JI projects take place in "industrialised" or "transitional" economy countries, the majority in Eastern Europe and Russia. As of September 2013 there are 759 registered projects with issuance of 827 carbon credits.

Expanding the carbon market through increased financialization in more industrial sectors and linking up carbon markets is a prime motivation of the EU. Some of these areas include: forest and land projects such as REDD+, offset projects that fuel land-grabbing; New Market Mechanisms (NMM), which aims to build sectoral offsets; and the Framework for Various Approaches, an initiative to link international carbon markets.<sup>101</sup>

System, while improving transparency and the legal framework. It should aim at faster integrating Ukraine into the Energy Community".<sup>102</sup>

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..."<sup>103</sup>

6) "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."<sup>104</sup>

Several gas pipeline projects are currently underway linking the EU with neighboring fossil fuel resources. The Nord Stream pipeline for example links the EU with Russia via the Baltic Sea, foregoing the Ukraine, and became operational at the end of 2011. The South Stream plans to link the EU with Russia via the Black Sea and is scheduled to be operational in 2015. The Nabucco pipeline will connect the EU with the Caspian and Middle East region and is scheduled to be completed in 2017.<sup>105</sup>

By 2020 import dependency is estimated to increase to 93% for oil and 76% for gas.<sup>106</sup> However, the Commission still maintains that GHG emissions reductions of 20% by 2020 and 80% by 2050 below 1990 levels are realistic through energy efficiency, renewables, nuclear and CCS. According to the IEA, "Our 450 Scenario (...) finds that almost four-fifths of the CO<sub>2</sub> emissions allowable by 2035 are already locked-in by existing power plants, factories, buildings, etc. If stringent new action is not forthcoming by 2017, the energy-related infrastructure then in place will generate all the CO<sub>2</sub> emissions allowed up to 2035, leaving no room for additional power plants, factories and other infrastructure..."<sup>107</sup> European energy legislation is not in synch. Targets to supposedly reduce emissions are in direct contradiction with plans to increase fossil fuel imports. Further fossil fuel infrastructure will lock-in GHG emissions rendering EU energy and climate targets futile.

### Magic Markets: The EIB, carbon funds and fossil fuel subsidies

Plans for an estimated 40% increase in fossil fuel imports and increased extraction within the EU overrides emissions reduction targets even when taking into account plans to increase renewable energy and energy efficiency.<sup>108</sup> Therefore, reaching target reduction levels are seemingly impossible without clever accounting tricks. One need not look any further than the EU flagship policy on reducing emissions, the EU ETS and the UN-backed offset schemes, the Clean Development Mechanism (CDM) and Joint Implementation (JI).

A majority of the energy infrastructure outlined above is financed through several International Financial Institutions, however, the European Investment Bank (EIB) carries the mandate to directly promote European development objectives. The EIB was set up in 1957 and is the EU's largest public finance

institution which operates in each of the 28 Member States and in 130 countries around the world. The EIB is directly involved in providing fossil fuel subsidies and lending through foreign direct investment. According to CEE Bankwatch Network, fossil fuels earned the highest EIB energy sector lending between 2007-2010, almost doubling the funds from EUR 2.8 billion to EUR 5 billion.<sup>109</sup>

In addition to the multitude of EIB's investments in fossil fuel development projects, the bank is deeply involved in the carbon market through a range of carbon funds (see box 'EIB carbon funds'). Not only does the bank profit from loans and various funds for fossil fuel projects, it also has ensured financial returns through the EU ETS and offsets in the CDM and JI, directly supporting the fossil fuel industry.

The EIB has operated six key carbon funds worth a total of EUR 589 million for investments in pre-2013 and post-2012 projects. An estimated 65% has been borne by EU compliance buyers (governments, ETS brokers and intermediaries on behalf of compliance buyers), 20% from the European Development Financial Institutions and Agencies and the remainder from the EIB.<sup>110</sup> The majority of the funds support "recovery" from gas flaring, "fuel-switching" and "methane capture" projects with additional investments in renewable energy such as large hydro-electric dams, tree plantations and forest carbon projects including Reducing Emissions from Deforestation and forest Degradation (REDD+).<sup>111</sup>

### Dare to Flare

The Multilateral Carbon Credit Fund (MCCF) was established by the EIB and the European Bank for Reconstruction and Development (EBRD). Public and private participants as well as shareholder countries in the EIB and EBRD can become members of the fund and purchase carbon credits from offset projects funded by the EIB and EBRD. The MCCF funds projects specifically located in Central Europe and Central Asia and is worth over EUR 208 million. It includes project credits (CDM and JI) as well as Green Investment Schemes (GIS), which are government-to-government trade in carbon credits.

One of the many problematic MCCF investments is a project with the Russian oil company Irkutsk Oil Company's subsidiary, UstKutNefteGas (UKNG). A JI offset project was set up to 'reduce' the volume of flared gas by re-injecting it into the reservoir at the Yarakta oil and gas field located in eastern Siberia (north of Irkutsk Oblast in the District of Ust-Kut and Katnaga).<sup>112</sup>

The JI project included the construction of a 30 km gas pipeline, two compressor stations, a gas re-injection well, gas storage facilities and additional power generation. The project was estimated to reduce emissions by 588,349 tCO<sub>2</sub> equivalent.

<sup>113</sup> It ran only one and a half years and was completed on 31 December 2012. The majority of the carbon credits were sold to the government of the Netherlands, and the governments of Spain and Switzerland, allowing increased pollution beyond the 'cap' in the EU ETS.

## EIB Carbon Funds:

### Six main funds:

- 1) The Multilateral Carbon Credit Fund (MCCF)
- 2) Carbon Fund for Europe (CFE)
- 3) Post 2012 Carbon Credit Fund (P2012)
- 4) The EIB-KfW Carbon Programme
- 5) The EIB-KfW Carbon Programme II
- 6) The Fonds Capital Carbone Maroc (FCCM)

### Other related funds:

- 7) New Entrants' Reserve (NER) auction fund (NER300)
- 8) Forest Carbon Offsets

Prior to the funds granted through the EIB and EBRD-led MCCF, the EBRD acquired an 8.15% stake in Irkutsk Oil Company and in 2009 sunk a EUR 90 million loan into refinancing a part of the company's debt in addition to financing infrastructure projects including pipelines and gas re-injection machinery.<sup>114</sup> Two key environmental and social impact assessments (EIA) were commissioned by Irkutsk Oil Company for the EBRD.

The Yarakta land overlaps with the Tomka community of the Northern Indigenous Peoples (IPs) who hold legal rights to hunt on a portion of the Yarakta lands. Several potential conflicts were outlined in the "Environmental and Social Action Plan" that admitted, "due to a probable presence of any religious places in the areas, there is a conflict possibility to be caused by disrupted traditional procedure of their visiting and usage."<sup>115</sup> The plan flippantly suggested speaking to the IPs about this "possibility".

In addition to these conflicts, other environmental issues were outlined in the EIA concerning rare migratory birds listed in the Red Data Books of the Russian Federation that inhabit areas in the Yarakta oil field during breeding and nesting seasons. The EIA states, "There are 9 species, which are currently included in the Red Book of the Russian Federation, have a rarity and can nest in this region, which requires special attention."<sup>116</sup> Even with the information outlining environmental and social conflicts issued earlier, the project was granted. The JI project was one of the first gas flare utilization projects in Russia which opened the way for several others.

In 2009 the Russian government announced a 2012 deadline to reduce gas flaring deeming oil companies responsible for increased use of associated petroleum gas by 95% or pay fines, which was later delayed to 2014.<sup>117</sup>

Carbon Fund	Amount	Projects	Types of Credits	Participants	Host Countries
The Multilateral Carbon Credit Fund (MCCF)	EUR 208.5 million (Project Fund = EUR 150 m, Green Fund = EUR 58.5 m)	Mitigation, Energy, Energy Efficiency, Forestry, Fuel Switching, Fugitive Methane, Renewable Energy, Transport	Focus on JI but with some CDM and EUAs projects (reductions must result from investment) and AAUs in CEE and the FSU. Carbon credits must originate from EBRD and/or EIB-financed projects located in EBRD's 29 countries of operation	Public: Finland, Belgium (Flanders), Ireland, Luxembourg, Spain and Sweden; Private: Zeroemissions (Spain), CEZ (Czech Republic), Endesa (Spain), Gas Natural (Spain) and PPC (Greece)	Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Georgia, Hungary, Russia, Kazakhstan, Serbia, Kyrgyz Republic, Latvia, Lithuania, FYR Macedonia, Moldova, Mongolia, Montenegro, Poland, Romania, Slovak Republic, Slovenia, Tajikistan, Turkmenistan, Ukraine and Uzbekistan
Carbon Fund for Europe (CFE): Joint initiative between EIB and World Bank	EUR 50 million	Renewable energy, Switch from fossil to biofuel, Energy Efficiency in buildings and industries, Methane recovery, Recovery of natural gas otherwise flared	CDM and JI	Member States: Portugal, Ireland, Luxembourg, Belgium (Flemish Region). Corporate: Statkraft (energy company), Norway	Czech Republic, Egypt, Jordan, Malaysia, Nigeria, Russia, Thailand
Post 2012 Carbon Credit Fund (P2012)	EUR 125 million	Mitigation, Carbon Capture & Storage (CCS), Energy, Energy Efficiency, Forestry, Fuel Switching, Fugitive Methane, Low-Carbon, Renewable Energy, Sustainable Land Management	Projects generating at least 250,000 tonnes CO <sub>2</sub> e in EURs or CERs with vintages 2013-2020	Caisse des Dépôts, Instituto de Crédito Oficial, KfW Bankengruppe, Nordic Investment Bank Carbon Managers: Conning Asset Management (Europe) Limited (Investment Manager) and First Climate (Investment Adviser)	All CDM and JI host countries
The EIB-KfW Carbon Programme I & II	EUR 100 million	Mitigation, Energy, Energy Efficiency, Fuel Switching, Fugitive Methane, Low-Carbon, Renewable Energy, Transport, Waste Management	Least Developed Countries (LDCs) -- all sectors; Programmatic approaches (PoA) -- all sectors; If country is not LDC or PoA, then only sectors: Renewable Energy, Energy Efficiency, Methane Avoidance (incl. landfill gas) Pre-2013 Credits (CERs in accordance with Art. 12 of the Kyoto Protocol (CDM) and ERUs in accordance with Art. 6 of the Kyoto Protocol (JI) Post-2012 Credits	KfW (Kreditanstalt für Wiederaufbau)	All CDM and JI host countries
The Fonds Capital Carbone Maroc (FCCM)	EUR 26 million	Mitigation, Energy, Energy Efficiency, Forestry, Fuel Switching, Fugitive Methane, Renewable Energy, Waste Management	Credits generated in Morocco between 2008-2017 to resell on the secondary market (globally)	Morocco's Groupe Caisse de Dépôt et de Gestion (CDG) 50%, France's Caisse des Dépôts et Consignations (25%), EIB (25%), Carbon managers: Accès Capital Atlantique S.A. (ACASA)	Morocco
New Entrants Reserve (NER) auction fund (NER300)	300 million permits	Renewable energy technology and Carbon Capture and Storage (CCS)	The revised Emissions Trading Directive 2009/29/EC contains the provision to set aside 300 million permits to subsidise RE and CCS	EIB, EC and Member States	EU
Forest Carbon Offsets	EUR 25 million	REDD+ forestry projects	Voluntary market with aim to link to other global markets that include REDD+ credits	Althelia Climate Fund	Focus on Africa, Latin America (regionally), and secondarily Asia (regionally)

Although gas flaring – burning off natural gas during oil extraction – is a critical problem related to climate change, gas flare reduction at the Yarakta oil field is something that would have happened anyway given the Russian gas flaring legislation.

<sup>118</sup> Questions remain whether extending this law to 2014 afforded time for other oil and gas companies to secure JI credits and therefore claim ‘additionality’.<sup>119</sup> However, this is not the first time that offsets were illegally issued when a gas flaring law was already in place (see below). At the time of writing, Russia has 182 JI projects in the pipeline, of which 53 are fugitive gas flare projects.<sup>120</sup>

### Resistance to a growing problem

According to World Bank satellite data, gas flaring increased globally by 2 billion cubic meters in 2011 to 140 billion cubic meters, equal to 360 million tons of greenhouse gases.<sup>121</sup> The growth is largely equated to increased hydrocarbon production in Russia, and shale oil and gas in the US state of North Dakota. The World Bank maintains that Russia remains the dirtiest gas flaring country in the world, followed by Nigeria, Iran, Iraq and the USA.<sup>122</sup> However, Russian officials insist it places second after Nigeria.<sup>123</sup>

Growing resistance against the notorious Russian oil industry has become more visible despite high risks of criminalization. The famous punk band “Pussy Riot” have continually brought pressing environmental and social issues into the public eye. The all-female band released a new video on You Tube in July 2013 heaping scorn on the oil industry titled “Like a Red Prison”.<sup>124</sup> The band shot the video in oil fields pitching oil onto a banner of Putin’s face and lambasting local oil giants Lukoil, TNK, Rosneft and Gazprom calling them the “evildoers at the oil towers”. Russian officials do not take Pussy Riot lightly. The government imprisoned two of the band members after an earlier public art performance. Nadezhda Tolokonnikova remains in prison to serve a two year sentence. On October 3<sup>rd</sup> she ended an 11-day hunger strike protesting “slave-labor” and horrible treatment. On October 18<sup>th</sup> she was moved to another prison as a result of her hunger strike but at the time of writing the information on her whereabouts is being kept from her family and friends by the Russian government.<sup>125</sup>

Another instance is related to plans for Arctic oil and gas drilling. Early September 2013, activists aboard the Arctic Sunrise organized a peaceful action against a Gazprom’s oil rig. The 30 activists onboard the ship were arrested at gunpoint, thrown in prison and the ship seized.<sup>126</sup> At the time of writing the activists have been denied bail and held for one month in increasingly colder conditions. All of the 30 women and men have been presented with hooliganism charges down from the original “Piracy” charges facing serious prison sentences.

### Carbon Trading Double Speak

Large oil companies in the EU not only use the CDM and JI to offset their pollution inside its borders but also set up projects abroad with their subsidiary companies allowing them to benefit

from direct carbon credit sales by positioning themselves for easy purchase. Therefore, the CDM functions to subsidize fossil fuel companies and eliminate any responsibility to reduce emissions.

It would be a blatant understatement to point to the oil giant Royal Dutch Shell as active in the carbon market. Shell was one of the original architects of the carbon market and has such a broad portfolio of CDM and JI projects that it operates its own “Secondary Offtake Credit Office” selling credits to other buyers. Shell’s CDM project teams operate out of London, Dubai, Tokyo and Beijing of which 70% of their CDM portfolio are projects hosted in China, India, Brazil and Mexico.<sup>127</sup>

Communities living in oil extraction regions in Nigeria have been at the forefront of years of severe harassment, threats, health disparities and murder from the oil oligarchies.<sup>128</sup> Shell in Nigeria is an infamous example of oil imperialism. Through a long, sordid history it is one of the leading companies involved in gaining CDM credits through the carbon market by using gas-flare-to-power methodology. Shell operates in Nigeria through four subsidiaries, primarily Shell Petroleum Development Company (SPDC). According to Nnimmo Bassey of Environmental Rights Action (ERA) and Chair of Friends of the Earth International, “These gas-flare-to-power plants do not fulfill the additionality requirement, as they are just partially halting an already illegal activity. Accepting gas-flare-to-power plants as registered CDM projects is unethical, and must be stopped.”<sup>129</sup>

In 2010 Shell admitted that their emissions from flaring increased 33% in 2010 compared to their 2009 figure. Amidst years of on-going struggle against dangerous gas flaring, the Nigerian High Court declared gas flaring unconstitutional and a human rights abuse in 2006, but the country is still plagued by mega-industrial gas flaring in close vicinity to local populations. While gas flaring has technically been illegal in Nigeria since 1984, the government grants exemptions to oil companies, and fines for flaring are criticized as being too light to act as a deterrent.<sup>130</sup> In 2012 a new bill taxing the flaring at the same worth as the commercial sale was implemented but has not been enforced. While Shell has yet to comply with a 2005 high court order to end gas flaring in the Iwherekana community of the Delta State, it is unlikely that it will yield to the new legislation.

Legislation to tax or halt gas-flare-to-power projects have been postponed over and over by the Nigerian government due to political pressure from the oil giants in the region. Reducing gas flaring is not seen as ‘economically feasible’ for oil and gas companies so they coldly account for the destruction of human livelihood and the environment as mere economic ‘externalities’.<sup>131</sup> In other words, it is more lucrative to sell the carbon credits onto the carbon market masqueraded as a ‘green’ techno-fix rather than address the real human rights abuses engendered by gas flaring projects or to even comply with legislation that is already in place.

This is a case again where avaricious big business overrules local governance when CDM credits are involved. Communities in the Niger delta continue to fight for their livelihoods but this time not only against big business but against green capitalism. Mr. Bassey states, "We cannot afford another time-buying exercise while our people die from gas flare-induced cancer, pollution of the air, water, and destruction of their livelihoods."<sup>132</sup>

### Expanding the customer base

Offset schemes allow fossil fuel companies to profit and expand their businesses abroad while at the same time earn credits to continue polluting in the North. In this way, offset credits function as an energy 'security' measure for fossil fuel companies.

One prominent example can be found with Repsol, the largest Spanish oil and gas company. The fossil fuel giant secured over 7 million surplus pollution permits through the EU ETS throughout 2008-2011, earning an estimated EUR 105 million in windfall profits by overestimating pollution outputs and receiving free permits.<sup>133</sup> In addition to massive earnings through the EU ETS in Europe, Repsol has also developed two of its own methodologies within the CDM and sold offset credits through its subsidiaries in the South.<sup>134</sup> Repsol developed two CDM methodologies for waste gas and fuel switching. There are currently nine CDM projects worldwide that have used these methodologies developed by Repsol for the UN CDM programme.

Repsol, through its Liquefied Petroleum Gas (LPG) unit in Peru, operated by Repsol Comercial del Perú S.A. (RYCOPESA), was granted permission to move forward with a Program of Activities (PoA) project which accepts coupling several CDM projects as a group.<sup>135</sup> The "fuel-switching" PoA project was registered in February 2013 and combines several small to medium-sized industries to switch from residual fuel oil to LPG.<sup>136</sup> The company claims that LPG emits less CO<sub>2</sub> than residual or other heavy fuels and therefore is justified as an "additional" emissions reduction project.<sup>137</sup>

Moreover, the fuel-switching LPG is offered by RYCOPESA to small and medium-sized industries that use residual fuels in their factories including: metal smelting processes, aluminum profile processes and food producing factories. Although residual fuel is cheaper than LPG, Repsol claims in the Project Design Document (PDD) that it will install the burners and materials at their expense and provides the LPG at "competitive" prices to the factory owners. The PDD emphasizes the voluntary participation by the factory owners, however, RYCOPESA will also benefit from locking-in buyers of the LPG until 2038. RYCOPESA will then sell the calculated emissions 'savings' from the industries' fuel switching through the CDM. With Repsol well positioned, it can purchase the in-house carbon credits to offset their emissions in Europe. A win-win for the oil company and its subsidiary but not a clear win for the factory

owners in the long term. This is one of three similar CDM programs that have been approved by the UN for Repsol. Nowhere in the PDD are Repsol extraction sites or refineries mentioned. At extraction sites there are additional impacts on the peoples and territories. Repsol and Petrobras, hold concessions to extract through the "Camisea Project", in the Urubamba Valley of the Amazon. The extraction concessions include lands within the indigenous Asháninka and Machiguenga Communal Reserves and the Otishisi National Park. There are 19 communities living inside the area. The Environmental Impact Assessment states that, "this area is one of the most biologically biodiverse natural areas in the world as well as an important area for ethnolinguistic diversity."<sup>138</sup> The "Camisea Project" involves gas extraction wells in the four bordering concessions, hundreds of kilometers of pipelines, refinery plants, ports, access routes and the installation of hundreds of kilometers of electrical cables for the machinery, overlapping with several communal reserves, Indigenous territories and national parks. Currently, the project aims to expand the extraction including an area which would overlap with a Reserve for Indigenous Peoples living in voluntary isolation.<sup>139</sup>

Repsol also benefits from the first 'waste gas recovery' methodology applied to a CDM project at the La Plata refinery in Argentina. The project was approved in 2010, becoming the first project of its type approved in the world and led the way for two more gas flaring methodologies. According to Repsol, the CDM Executive Board used some elements of its own methodology to develop the new one. Also indicative of the importance of the methodology applied in La Plata refinery is that, after its approval, the CDM Executive Board approved another waste gas methodology, "Recovery and utilization of waste gas in refinery facilities".<sup>140</sup> There are currently four projects being developed world-wide applying this methodology.

Repsol, like Royal Dutch Shell, has a long, despotic history in Peru. The company has been drilling in territories of Indigenous Peoples living in voluntary isolation, a direct violation of the law.<sup>141</sup> It is also part of a consortium of oil giants that are responsible for terrible human rights violations in drilling areas.<sup>142</sup> The CDM finances the company on one side so that Repsol can expand oil extraction plans in indigenous territories on the other.

Companies committing human rights abuses and illegal acts should *not* be rewarded with profits of any kind, and certainly not profits from ostensible carbon credits. Not only do carbon markets permit companies to pollute over their limits, they allow profit at the expense of local communities. In addition, any meaningful GHG reduction targets are useless when a carbon market is in place. In conclusion, IFIs, governments and companies involved in carbon markets are funding attacks on the environment and people through fossil fuel corporations. This is not an aberration, it is not a mistake, it *is* the business plan.



## PART 3 WHEN RENEWABLE ENERGY MEANS DIRTY ENERGY

### Introduction

As outlined in the previous sections, the EU still heavily depends on fossil fuels for generating its energy needs. In 2010, 76.4% of primary energy consumption was generated using fossil fuels, while nuclear power contributed with 13.5%. Renewable sources accounted for a mere 9.8%.<sup>143</sup>

The Renewable Energy Directive (RED) follows from the Europe 2020 strategy, mandating differentiated national targets to increase the share of renewable sources to 20% of EU's energy use and 10% of energy use in transport.<sup>144</sup> For these targets to be achieved, Member States must devise national action plans.

As all energy sources apart from fossil fuels and uranium are considered renewable, the Directive gives an explicit incentive for the expansion of 'bioenergy', predicting in its preamble an expansion of biomass, inside and outside the EU. Biomass entails food crops and tree plantations, which are intended for both fuels and as raw materials from which to manufacture a wide range of products, including plastics and chemicals.

Following the logic of the EU ETS, the RED also creates what it calls "statistical transfers" of renewable energy, a flexible mechanism that in effect translates into a cap-and-trade system of renewable energy credits. Through this mechanism, Member States that have a lower share of renewable energy can buy RED credits from other States that have a higher share, instead of expanding their share domestically. This makes over-complying with the renewable energy targets meaningless, as it allows Member States to evade their obligations. This logic does not promote a just transition away from fossil fuels but advances an environmentally and socially harmful economy which promotes increased pressure on lands and forests for intensifying levels of energy production and use.

Another 'flexible mechanism' included in the RED is joint transfers, through which imported renewable energy can account for the national targets. A EU Member State can use this instrument to finance a renewable energy project in another country, which will generate electricity for its own consumption. An example is the agreement between Germany and Greece, through which the latter will pay a part of its debt by exporting solar power to the former. Germany benefits both from importing relatively cheap energy and from the fact that these imports add to its national target for renewable energy.<sup>145</sup>

The use of "renewable energy" in transport (agrofuels) falls jointly under the Fuel Quality Directive, which mandates a 10% emissions reduction per unit of energy from fuel suppliers.<sup>146</sup> This objective is to be met by using agrofuels, reducing gas flaring and venting (6%), CCS, electric cars (2%) and the purchase of CDM offset credits (2%). From this listing, it becomes obvious

that there are no real reductions, but more techno-fixes and financial transactions using carbon credits.

This directive does not question extractivist policies that seek to remove increasing quantities of fossil fuels from underground, as well as the construction of further high-carbon infrastructure which would in turn lock-in fossil fuel use in the long term. Instead of long-term structural changes in the current energy systems, the EU sets out technological and market fixes that ignore their inherent contradictions.

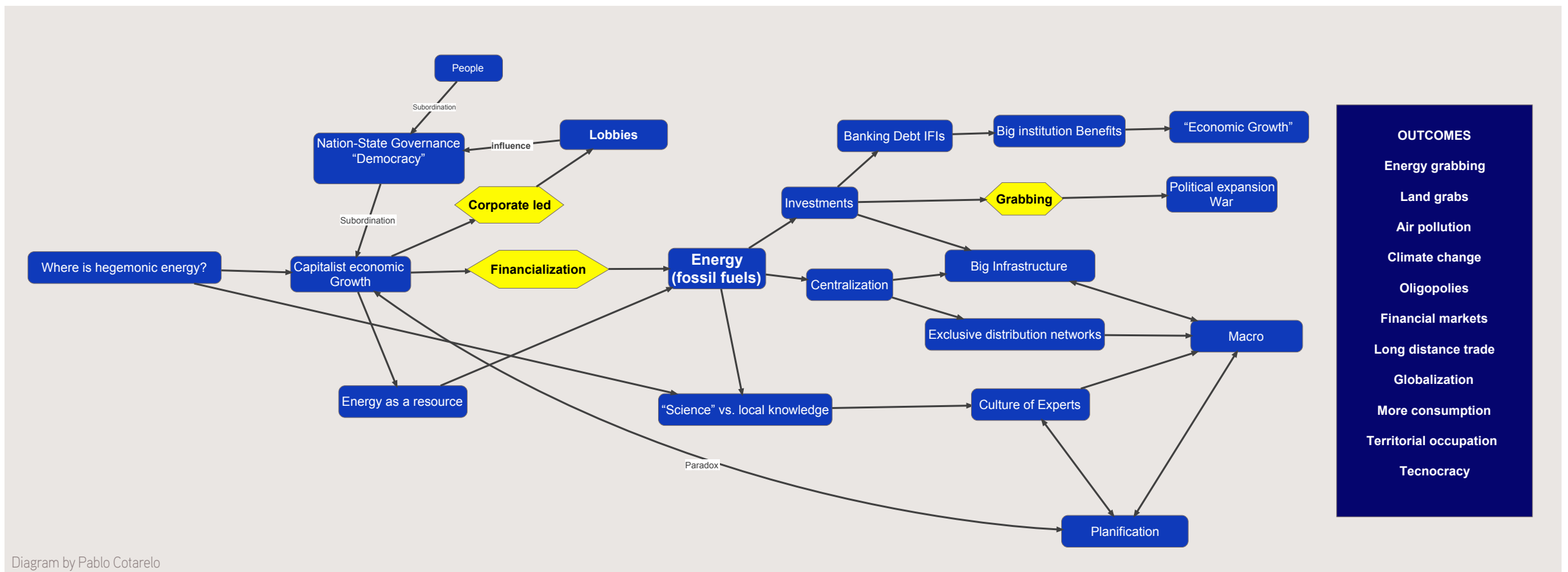
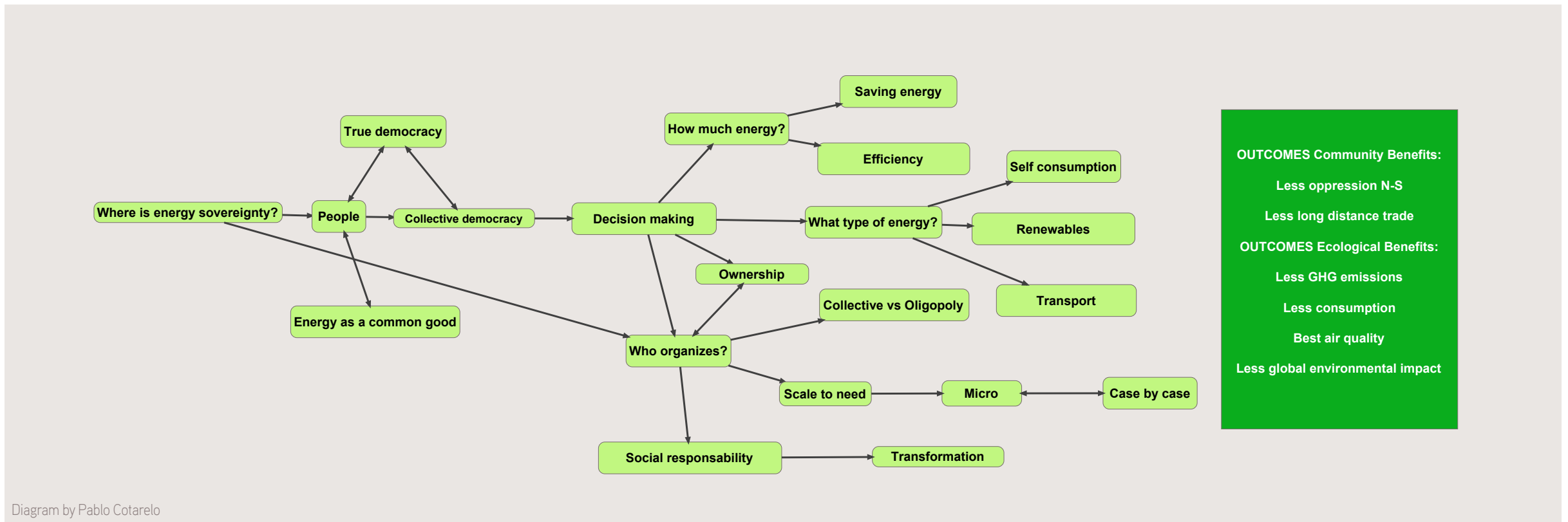
Replacing fossil fuel and nuclear energy for 'renewable' energy sources runs into insurmountable contradictions between a system based on constant expansion of production and consumption, "just in time" strategies and growing international trade in addition to the intermittent and unpredictability inherent to using the sun, the wind or the waves as energy sources. Furthermore, an energy strategy based on changing sources does not even attempt to address the inequalities endemic to large extensions of land grabbing or accessibility to the commons, including the sun, wind and waves.

Techno-optimists predict that, in the future, storage systems, based on huge batteries and water reservoirs, and international smart grids, that distribute supply, will solve all of these problems, making it possible to have an expanding global economy based on renewable energy.<sup>147</sup> But even if this was possible, it would demand huge influxes of metals, rare earth minerals and water, leading to increased conflicts and pollution due to extractivism, land enclosure and water depletion.<sup>148</sup>

The same issues can be raised with the European strategy for developing renewable sources for energy, which appeals to an unqualified concept of renewable energy. Dirty investments like burning trees in biomass plants, using agrofuels from large-scale monocultures or constructing large wind farms in ecologically sensitive areas, account both for the fulfillment of the RED targets and of the EU ETS cap on emissions. The current legislation assures that all of the negative environmental and social impacts in these investments are greenwashed, from the moment that the label "renewable energy" is used.

This greenwashing is fundamental to frame renewable energy investments as a cornerstone of the "Europe 2020 Growth Strategy" for "smart, sustainable and inclusive growth".<sup>149</sup> In the same line, energy efficiency is supposed to counter rising energy consumption in a growing economy. The inherent belief within "energy efficiency" debates that consumer capitalism and ecological sustainability are compatible and interdependent has become hegemonic; technological innovation, financialisation and managerial perfection are asserted to be the most appropriate strategies to achieve sustainability, even though empirical experience suggests the opposite.

# ENERGY SOVEREIGNTY BASED ON JUSTICE VERSUS HEGEMONIC ENERGY BASED ON POWER: TOOLS FOR DISCUSSION



### Renewable Greenwash

It is not possible to define what counts as a renewable energy source merely considering scientific evidence because much of the materials and space required to produce renewable energy is non-renewable. Furthermore, the majority of renewable energy projects are already embedded into a framework based on large-scale polluting industry and economic inequality. Renewable energy is, therefore, a socially and politically challenged concept.

### Forests as fuel

Bioenergy, that is, the generation of heat and power using organic materials, is referred to by EU governments as a panacea for increasing renewable energy. Large-scale exploitation of biomass based on industrial monocultures reduces all living things in a given place at a given time to deposits of bulk cellulose and carbon.

In 2011, biomass accounted for about 67% of renewable energy primary production in the EU.<sup>150</sup> The renewable energy plans submitted by EU Member States predict that this share will decrease to 54.5% by 2020, with the total production of increased bioenergy.<sup>151</sup>

The predominance of biomass can be explained mostly by its compatibility with an energy system based on fossil fuels. Coal plants can be adapted to run on a mix of coal and biomass, which allows utilities to evade environmental regulations, such as the Large Combustion Directive, and thus increase the lifespan of coal-fired power plants that do not meet new regulations.<sup>152</sup>

According to EU's accounting rules, all bioenergy is "zero-carbon", meaning that no greenhouse gas emissions are accounted for with biomass combustion. These rules assume that the CO<sub>2</sub> emissions from burning organic materials, which are up to 50% higher than coal in the case of biomass, are absorbed by the plants used in their growth process.<sup>153</sup> By switching from coal to wood pellets as a fuel source, a utility can claim a 100% emission reduction, thus reducing the amount of EU ETS permits that it has to buy. In addition, the companies can profit by selling permits in the carbon markets.<sup>154</sup>

In order to produce large amounts of wood pellets for biomass combustion, monoculture tree plantations are being expanded mostly where lands are cheap and especially in regions where land tenures are weak or non-existent, increasing harmful social and environmental consequences. Furthermore, the accounting tricks involved in making biomass carbon neutral create a false equivalence between biodiverse forests and plantations, which is a major driver of land grabs, deforestation and climate change.

Even the European Environment Agency Scientific Committee admits that treating bioenergy as carbon-neutral is a "serious accounting error", because it relies on double-counting carbon that has supposedly been sequestered through biological

processes.<sup>155</sup> Concretely, if tree monocultures planted for biomass energy production replaces forests or if forests are cut down, then biomass would not be considered "carbon-neutral". In addition, if these monocultures replace food crops, then not only does this drive hunger and land dispossession in the South but also leads to emissions from land-use change.

Monocultures use heavy fossil-fueled machinery, pesticides and agrotoxics which further harm the local environment and communities' health. Moreover, the manufacture and transport of the wood pellets across oceans are not even considered. It is not possible to produce large-scale biomass energy without massive land grabs leading to land-use change. The expansion of biomass, which is rewarded with the EU ETS accounting rules, leads to an aggravation both of the climate crisis and land pressures.

Further, the problem cannot be reduced to a technical issue solved by carbon accountants. In the EU ETS, accounting rules are not "objective", but rather reflect a growing power of industrial lobbies. The way in which emissions are accounted for lead to changes in the distribution of income between consumers and producers and even across different industries. In this sense, accounting for biomass emissions in the EU ETS would not lead to any change in the energy system but rather just lead to higher electricity bills, as utilities can pass on the cost of buying more permits to consumers.<sup>156</sup>

The consequences of biomass expansion can be illustrated through the UK Bioenergy Strategy, approved in April 2012. The government expects to increase the share of bioenergy in total primary energy demand by up to 11% by 2020.<sup>157</sup> This has led the UK energy industry to devise plans to expand the use of biomass that would burn 90 million tonnes of wood per year, according to Biofuelwatch estimates, which exceeds the total domestic wood production by a factor of nine.<sup>158</sup> The wood will, of course, be mostly imported from overseas, after being processed into pellets. In the end, the pellets will be used both in dedicated biomass plants and in existing coal plants.

Currently, most of the imported wood comes from Canada and the US but a report from the European Parliament, predicts that future demand from the EU will be supplied increasingly with wood from South America (mainly Brazil) and Central and West Africa.<sup>159</sup> With the increase in the demand for wood, prices will increase, fuelling land grabs and deforestation for the expansion of tree monocultures. There is already much evidence of land grabs in Brazil. For example, forests in the region of Maranhão are being replaced by eucalyptus monocultures, with the opposition of local communities, to supply UK's biomass plants with wood pellets.<sup>160</sup>

Biomass in the UK is subsidized with the Renewables Obligation (RO), a market-based policy implemented in 2002. Through this policy, utilities must comply with mandated targets for renewable energy by surrendering Renewable Obligation Certificates

(ROCs), tradable assets that are given to power generators that use renewable sources.<sup>161</sup> What the RO produces, therefore, is a means to subsidize biomass, including co-firing with coal, as utilities that increase their use of biomass can then sell ROCs to other utilities or traders. The cost of this policy is borne by electricity consumers in the form of higher bills.

Replacing coal with wood pellets in power plants also gives utilities a way to evade regulations for sulphur dioxide (SO<sub>2</sub>) emissions from the EU Large Combustion Plant Directive. This directive will in effect force coal plants in the UK, which are among the most polluting in the EU (regarding SO<sub>2</sub> levels) to either install expensive scrubbers or shut down by the end of 2015. Since biomass burning releases less SO<sub>2</sub> than coal burning, utilities can in effect prolong the life of their coal plants by converting them to mixed coal and biomass-burning plants. Already five coal power plants have been given planning consent to use this loophole.<sup>162</sup>

Despite its negative environmental impacts, energy generated by biomass burning accounts for the compliance with the UK target for renewable energy mandated by the RED (15% of gross final consumption). Furthermore, as the EU ETS ignores the emissions from bioenergy and considers biomass to be “carbon-neutral”, it functions as a subsidy on top of the RO for dirty biomass.<sup>163</sup>

### Crops as fuel

Another clear example of the use of so-called renewable energy as a cover for the dependence on fossil fuels is the replacement of oil for agrofuels, i.e., biodiesel and ethanol. Instead of concentrating on reducing transport needs through better urban planning and public transport, the EU’s priority is to sustain private modes of transportation by switching a percentage of fuels used in cars. This is visible in the Renewable Energy Directive’s target of supplying 10% of energy needs in transport with renewable sources, i.e. agrofuels, by 2020. Complying with this target will fuel land grabs and push up food prices, as well as aggravate climate change.<sup>164</sup>

The expansion of agrofuels depends on monocultures, a land-intensive industry which competes with food production for land and other agricultural inputs. In 2012, 65% of vegetable oil production in the EU was used for biodiesel production, while the share of imported oils and seed for biodiesel refineries continued to increase steadily.<sup>165</sup> As a result, six million hectares of farmland in Sub-Saharan Africa were bought between 2009 and 2013 by EU companies to produce agrofuels for export.<sup>166</sup> In fact, agrofuel production is now the main driver of land grabs in the South, representing 37 million hectares, which is more than all the other drivers of land acquisition or leases combined.<sup>167</sup>

This is a reflection of the Indirect Land Use Change (ILUC) problem, which originates from the conversion of forests, grasslands and other lands to crops used for energy sources. The land converted is often designated as “barren” or “unused”

by governments and industries, despite having significance for a local community. As the demand for biodiesel and ethanol increases, this problem is magnified, resulting in massive increases in GHG emissions. Oxfam estimates that by 2020, the ILUC emissions from palm-oil production will have reached between 3.1 and 4.6 billion tonnes of CO<sub>2</sub>, which is about 46 to 68 times the annual emissions reductions that the EU attributes to agrofuel use.<sup>168</sup>

As with biomass, the use of agrofuels is considered to be “carbon-neutral” because the emissions from burning these fuels are supposedly compensated by the CO<sub>2</sub> absorbed by the industrial crops. But the math does not add up, as the same argument against considering biomass as carbon-neutral applies. Direct and indirect land use changes imply that the expansion of industrial crops is achieved at the expense of cutting down forests, releasing the carbon that was stored and creating a “carbon debt”, incalculable for local communities, and that is equivalent to decades or even centuries of the supposed emissions reductions achieved with agrofuels.<sup>169</sup> Furthermore, the production of inputs for agrofuel production, like corn or rapeseed, involves the heavy use of agrototoxic chemicals and heavy machinery, which result in the release of GHG, making agrofuels actually worse than oil when only considering lifecycle emissions.<sup>170</sup>

The European Commission reacted to the criticisms made to the increase of agrofuel consumption by issuing in 2012 a proposal to limit the use of first generation agrofuels (mainly produced from food crops) for the achievement of the Renewable Energy Directive (RED) target to 5%. The other half of the target is to be met mainly by second-generation agrofuels, which do not depend on food crops.<sup>171</sup>

The decision to cap first generation agrofuel use was deferred until 2015 recently by the European Parliament.<sup>172</sup> This reflects both lobbying by agrofuel industries and the expectation that second-generation agrofuels will not become commercially available in the short term, which means that the progress towards meeting the RED target will primarily be achieved through food-based agrofuels.<sup>173</sup> Furthermore, second-generation agrofuels will stimulate demand for biomass, including agricultural and forest residues (which is necessary to replenish the soils with nutrients), cellulose (with tree monoculture industries developing genetically modified trees) and other vegetable materials extracted from agro-industrial processes.

Even though their problems are evident, research in second-generation agrofuels production is being subsidized by the EU ETS, through the revenue of the NER300 funds, which come from auctioning 300 million permits to new entrants in the carbon market.<sup>174</sup> So far, 200 million permits were auctioned, and funds over EUR639 million were awarded to “bioenergy” projects, including EUR 527 million for second-generation agrofuels, which will use wood, crops, straw and agricultural residues to produce energy for transports and industries.<sup>175</sup>

Agrofuel production has already mobilized several major corporations in multiple economic sectors: Oil, BP, Shell, Chevron, Exxon, Total; pharmaceuticals. Roche, Merck; agro-industry, Unilever, Cargill, DuPont, Monsanto, Bunge, Procter & Gamble; chemical, Dow, BASF; and the US Army.<sup>176</sup> The US military-industrial complex is set to benefit from the EU push for bioenergy, which rests on the appropriation of land in the South to meet the necessities of ever-growing energy consumption.<sup>177</sup>

There is no techno-fix or accounting trick that will make agro-fuels a sustainable alternative or make it possible to continue a transport system based on the use of motorized vehicles such as cars and planes. Instead investments in public transport, urban bike programs and other measures to reduce demand for motor fuels would be more viable alternatives. In more general terms, increasing the production of bioenergy leads to increased conflicts over land and food, while aggravating climate change and leaving the fossil fuelled economy untouched.

### How airlines use agrofuels to profit from the EU ETS

Transport emissions were initially not included in the EU ETS, but this changed partially in 2012, when aviation emissions were included and airlines joined the carbon market. Airlines face a cap on emissions from flights departing or arriving in EU countries which was set at 95% of the average emissions in the 2004-2006 period.<sup>178</sup> Yet, as airlines can buy permits and credits to use for compliance, even an impact assessment carried out for the EC estimated that the emissions reductions by 2020 would amount to a mere 2.8%, assuming that flight demand will decrease as airlines pass on the costs of compliance with the EU ETS to their customers.<sup>179</sup>

The International Air Transport Association has lobbied the EU institutions heavily to water down regulations on emissions from aircrafts. This led to a complete overhaul of the European Parliament's proposals on the directive that incorporates aviation emissions in the EU ETS, namely those that would make airlines pay for permits and reduce their emissions by 10%.<sup>180</sup> But airlines have been very active in promoting agrofuels as a technology that can be used to comply with a cap on their emissions, companies including, Lufthansa, Air France/KLM, Virgin Atlantic and SAS having set up the Sustainable Aviation Fuel Users Group with this goal in mind.<sup>181</sup>

As the EU ETS considers agrofuels to be a zero-carbon technology, emissions from their use in aviation are not included in the carbon accounting. Furthermore, the EU Commission has partnered with Airbus, some major airlines (Lufthansa, Air France/KLM, & British Airways) and the biggest agrofuel producers (Choren Industries, Neste Oil, Biomass Technology Group and UOP) to launch the European Biofuel Flightpath initiative, which aims to increase the use of 'bio'-kerosene in aviation by 2 million tonnes per year by 2020, on top of the RED target.<sup>182</sup> Friends of the Earth estimates that meeting this goal will imply growing 3.5 million hectares of feedstock, which is about the size of Belgium.<sup>183</sup>

### Hydro vs Rivers

Hydro power is the second major source of renewable energy primary production in the EU, accounting for 16%, almost as much as wind, solar and geothermal combined.<sup>184</sup> This reflects the extensive use of dams for generating electricity, which is popular in many countries due to the predictability of production and the complementary use with irrigation systems. But naming hydro power as a "clean" energy source ignores its negative environmental and social impacts.

Building dams to trap water in rivers leads to the displacement of communities living in river valleys and flooding of villages, heritage sites and transport infrastructure. It also implies a major transformation in river valley ecosystems. By effectively transforming a river into a lake, dams lead to the disappearance of many species, namely fish and other aquatic species, as well as a reduction in water quality. Dams also lead to the entrapment of sediments, the circulation of which is essential for maintaining ecosystems downstream, like coastal wetlands.<sup>185</sup>

Large dams also contribute to climate change, as the flooding of a valley leads to massive releases of CO<sub>2</sub>, nitrous oxide and methane, due to the rotting of organic matter. When this is considered, dams can actually contribute more to climate change than some fossil fuel plants.<sup>186</sup> Emissions from hydro energy, though, are not accounted for in the EU ETS.

The controversies surrounding large dams can be illustrated with Portugal's National Plan for Dams With High Hydroelectric Potential, which will result in the construction of nine new large-scale dams. The plan, which includes hydroelectric pumping to store energy produced by windmills, was supported with three goals: increase the renewable energy share mandated under the RED; reduce energy imports; and reduce greenhouse gases. Nevertheless, research conducted by environmental NGOs showed that the contribution of the new dams amounts to about 3% of electricity consumption, which is less than the average increase in electricity demand registered in the 2000-2010 period.<sup>187</sup> The research also estimates that electricity tariffs will have to increase about 4%, to accommodate the costs of building and maintaining the dams.

One of the most controversial of the new dams is the Tua Valley Dam. The valley is part of a biodiverse area considered one of the last wild rivers in Portugal. It is also where the Tua train line was located, a historic train line, more than 150 years old, and an important means of transport for local communities. Further, the valley is located next to the Alto Douro Wine Region, a UNESCO World Heritage Site and an important area not only for wine but also for tourism. Despite negative impacts and the fact that almost all opinions received during public consultations for the Environmental Impact Assessment were critical to the dam, the Portuguese government is still committed to building the dam, which has led local movements, environmental NGOs and political parties to protest, highlighting the problem of destroying natural and rural areas in the name of "green development".<sup>188</sup>

The EU ETS also finances hydropower around the world through its linkage with the CDM. About 27% of all CDM credits are generated through investments in large dams and most are sold to governments and companies for compliance with the EU ETS.<sup>189</sup> These dams are associated with major displacements of local communities, often with the muscled support of private security or local police, as well as non-compliance with (weak) environmental regulations.<sup>190</sup>

One of the worst contemporary examples of large dams being financed by the CDM is in Brazil, where three megaprojects (the 3,150 MW Santo Antônio Dam and the 3,750 MW Jirau Dam, on the Madeira River, and the 1,820 MW Teles Pires Dam in the Brazilian Amazon) are set to receive millions of euros in carbon credits.<sup>191</sup> Hundreds of local communities, including Indigenous Peoples, have been displaced or have had their livelihoods and spiritual heritage sites desecrated by these megadams. In addition, biodiversity in the region is at high risk. Still, the “carbon neutral” label that is attached to CDM hydro projects allows the generation of carbon credits used by industries in the EU ETS for further production and use of fossil fuels.

### Not just about technologies

According to the logic of the EU ETS, through EU energy policies, all energy which is considered “zero-carbon”, including all renewable sources and nuclear power, is subsidized. Investments in these “zero-carbon” energy sources in detriment of fossil fuels reduce the amount of GHG emissions accounted by the scheme. This leads utilities to buy less permits or even sell excess permits, profiting from the EU ETS. What this logic misses is not only the fact that many of these energy sources increase climate change, but also that carbon emissions are not the only thing at stake.

There are other distinctions to be made in the implementation of renewable energy plans not related to the characteristics of the technologies but rather to the social context. Large scale deployment of renewable energy without community involvement and without considering the potential environmental and social impacts leads to megaprojects with negative environmental and social damages being labeled as “clean energy” projects.

This is particularly evident in the case of large dams, as they lead to the displacement of communities. But even with large wind farms or solar parks, expansion led by the attempt to increase energy generation in a growth-led economy, will inevitably lead to an expansion of land conflicts due to land use by wind turbines, solar panels and power lines. Furthermore, since these installations frequently are located within biodiverse areas, conservation concerns multiply, partly because of their direct impacts (as in the case of bird and bat deaths caused by wind turbines) and partly because of infrastructural impacts caused by the expansion of roads, power lines and other infrastructure.<sup>192</sup>

These conflicts are a result of scale, corporate and centralized ownership models and lack of communities’ involvement, more

than the characteristics of the technologies. For example, in Denmark, wind energy was initially deployed in a way compatible with a community-owned and decentralized energy system. In the late 1990s, planning permissions for wind turbines were no longer conditional on having members of the local community involved through owning cooperative shares. This change incentivized outside investors to impose large wind parks, leading to local struggles against wind energy.<sup>193</sup>

The distribution of costs and benefits is also important. Germany’s feed-in tariff scheme has resulted in massive subsidies for the installation of solar panels, stimulating microproduction and the creation of local cooperatives. Nevertheless, the exemptions given to industries led the cost of these measures to fall exclusively on private consumers of electricity, amounting to 20 per cent of their bill.<sup>194</sup> As the installation of solar panels is still quite expensive and requires space for installation, low-income families are excluded from the benefits of the subsidies, while having to bear the cost through higher electricity bills. The feed-in tariff, therefore, ends up being socially regressive.

A more extreme example of how investments in solar and wind energy that go wrong can be seen in Morocco’s plan to expand renewable energy production. Two of the proposed solar parks, as well as two wind farms, are projected for construction in the Western Sahara, a region struggling for its autonomy from Spain, Morocco and Algeria since the late 19<sup>th</sup> century. The Saharawis were not consulted and oppose the occupation of their territory for these infrastructures, since the energy generated will be exported to Morocco.<sup>195</sup> This case shows how renewable energy can follow the same pattern of neocolonial resource exploitations that is observable with fossil fuels.

While the EU is not involved in the deal, this could change in the next years. It is possible that in the future a part of the energy generated in Morocco and other Northern African countries can be exported to the EU. This was the main motive for setting up the Desertec Foundation, which partnered in 2009 with financial companies like Deutsche Bank and Munich Re and utilities like RWE and E.ON to create the Desertec Industrial Initiative.<sup>196</sup>

Desertec has since abandoned plans to export solar energy from the Sahara to Europe, due to problems with grid connectivity.<sup>197</sup> But the project remains within the Medgrid Initiative, a consortium created mostly by European energy companies to create a Euro-Mediterranean electricity network. Medgrid is a part of the Mediterranean Solar Plan (MSP), a political initiative within the Union for the Mediterranean (UfM), in which EU and Northern African countries are represented. At a conference promoted by Desertec, the UfM Secretary General, Fathallah Sijilmassi, claimed that “The Mediterranean region has the potential to both meet the growing domestic demand and secure export to Europe”.<sup>198</sup>

Importing solar energy not only allows the EU to use land in Northern Africa to meet its growing energy glut but also helps to meet the renewable energy targets set in the RED. On top

of that, the energy companies that produce solar energy in Northern Africa can apply for CDM credits, which can be used to offset emissions by EU ETS covered industries. It is of no wonder, then, that the EIB has granted EUR 300 million to finance the construction of a 500 MW solar plant in the Moroccan city of Ouarzazate<sup>199</sup> This is the first of five solar plants projected for Morocco under the MSP, two of which are planned for the Western Sahara occupied territories.<sup>200</sup> The EIB also plans to act as an intermediary in future CDM credits deals, through its Morocco Carbon Capital Fund.<sup>201</sup>

### Energy Efficiency

As a part of the Europe 2020 Strategy, the EU claims to be committed to reduce 20% of its primary energy consumption by 2020, relative to the projected consumption by that date. This is the non-binding objective of the Energy Efficiency Directive (EED), which was approved in 2012. Since the directive has been so watered down, this objective will clearly not be met.<sup>202</sup> The EU, however, claims that energy efficiency measures will reduce consumption.

Increasing energy efficiency is promoted both as a low-cost investment in reducing GHG emissions and as a way to boost competitiveness for EU industries. The Energy 2020 Strategy, states that the main goal is “decoupling economic growth from energy use”, meaning that somehow growth in the production of material goods can continue to increase continuously while energy consumption will decrease.<sup>203</sup>

These claims are unsubstantiated by historical experiences of industrial economies. Despite constant and significant reductions in the energy intensities of these economies, their absolute consumption of oil, gas and coal has increased continuously, leading to an increase in GHG emissions.<sup>204</sup> This is a result of the efficiency paradox: increased energy efficiency leads to a decrease in the relative price of energy, which can lead to an increase in energy consumption.<sup>205</sup> As industrial economies are growth-driven, any increase in the energy efficiency of cars, electric appliances and other products is more than likely to be over-compensated by an increase in consumption and production of these goods.

In addition, the EC is currently debating plans for Energy and Climate Policy between 2020-2030. At the time of writing, debates have centered around removing all renewable energy targets and instead including what is being referred to as

“decarbonization technologies” with “decarbonization targets.” These “decarbonization technologies” include nuclear, shale gas and CCS. Proponent of the EU ETS have been clear about wanting to get rid of renewable energy targets because they argue that the RE targets have wrecked the price of carbon. According to David Hone of Shell Oil, the “ETS, should be allowed to decide the energy mix, plus we need some macro decisions on certain technologies such as nuclear. We should get rid of all the other policies and targets including renewable energy goals, efficiency standards etc., and let the ETS do the heavy lifting it is set up to do.”<sup>206</sup>

The debate on energy efficiency in the EU has, however, been dominated by concerns with the inherent contradictions in the EU ETS. If energy consumption actually decreases and the share of renewable energy increases, that would lead to a decrease in the GHG emissions accounted for in the EU ETS. This, in turn, would cause an ever greater over-supply of permits, bringing prices down.

A proposal to include a set-aside clause in the EED was made by the European Parliament but the EU Council, representing Member States, opposed this proposal.<sup>207</sup> Presently there is an estimated oversupply of permits in the EU ETS of over two billion, yet the EU only approved a temporary set-aside of 900 million permits.<sup>208</sup> This oversupply is reinforced by the possibility of using offset credits for compliance. In addition, unused offset credits can be swapped for permits until March 2015.<sup>209</sup>

The chronic overallocation of permits in the EU ETS results in a massive subsidy for big polluters, as industries can sell for a profit permits they got for free, by passing through to consumers the ‘opportunity cost’ of the permits they used. This has been a constant practice in the EU ETS, with profit estimates reaching EUR 71 billion for electricity generators in the second phase (2008-2012) and EUR 14 billion for steel, iron and refineries in the 2005-2008 period.<sup>210</sup>

Even the EC admitted this, “The ETS as a whole has been a financial support to the energy intensive industries... who usually complain that the ETS is killing them.”<sup>211</sup> European institutions and governments, nevertheless, insist that maintaining this financial market that redistributes income from consumers to the biggest energy users is compatible with energy policies that deliver reductions in consumption.

## CONCLUSIONS

Despite targets and mandates made by the EC to address climate and energy, the EU remains committed to a fossil-fuel based, growth-dependent economy, in which environmental policies follow the interests of polluting industries. This apparent paradox is made possible by the EU ETS, through which GHG emissions magically “disappear” through various accounting tricks.

Coal plants with CCS, biomass plants, large dams and vehicles using agrofuels are all considered to be “carbon neutral” or “zero carbon” within the EU ETS. Emissions from imported products and extracting fuels are not accounted for in the importing country, which benefits the EU. In addition, the EU ETS allows polluters to replace real emissions reductions with fictitious ones that are achieved through buying permits and offset credits. These “tricks” combined render emissions targets meaningless, as the EU can comply with these targets and increase its emissions.

Considering that most GHG emissions come from energy use, the effectiveness of the EU ETS can be evaluated through its effects in energy use, import and production. This report shows that the EU ETS actively undermines a transformation towards community-based, democratic and cleaner energy systems, while strengthening EU’s dependence on extractivism, fossil fuels and dirty energy labelled as “renewable”. Furthermore, the EU ETS conflicts with policies that could reduce energy consumption, as these would lead to an even greater oversupply of permits.

The logic of carbon trading feeds into the techno and market fixes that the EU is implementing through its energy policies, which involve greater use of coal and gas, as well as a major push for the expansion of “bioenergy”. The negative environmental and social impacts of these policies are invisible within the EU ETS.

Neither the RED nor the EED question the increased use of fossil fuels or the construction of further high-carbon infrastructure, like pipelines and power plants. Also, these directives rely on abstract notions of “renewable energy” and “energy savings”, so that their implementation leads to investments in large energy projects that rely on expanding power grids, storage systems and tree and crop monocultures. The increased extractivism and common property encroachment that follows is a driver of local conflicts, following the same pattern found in fossil fuel extraction.

Apart from polluters and traders, no one benefits from the EU ETS, as it allows fossil-fuelled energy to expand, aggravates the climate crisis, contributes to human rights violations and environmental crimes in the North and South, and makes climate policies dependent on the same unstable financial markets that brought us the recent economic crisis. The EU ETS is worse than nothing and dropping it should be a top priority to open the space for effective, justice-based and people-centered democratic climate policies.



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