

The EU's weak point: Energy - and the three white elephants

Thursday 3 June 2021, by [HERTOFT Mikael](#) (Date first published: 22 April 2021).

One got the feeling that Frans Timmermans came flying in on a white elephant when he presented the EU solution for the future 'green' economy on 8 July: Hydrogen - the fuel that can be produced cleanly and must be used in the new hydrogen economy. Unfortunately, the road to the hydrogen economy is paved with CO₂ emissions - and the EU solution has both economics, as well as natural laws, against it.

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The EU wants to be a strong power - but has a very weak point. The EU is completely dependent on energy imports.

The EU Commission says it is working on a "green deal" to divert the EU away from fossil fuels - but at the same time the EU is investing billions and billions in oil and gas - and coal still plays a major role in many EU countries.

Both the EU itself and a Russian-German consortium are making billions in investments in gas infrastructure, and the Danish state is happy to play a part - both under the previous government and the current one - despite all climate legislation.

The EU has allocated € 29 billion in subsidies for gas projects. The 32 projects were approved by the

EU Parliament in the spring of 2020 and one of them is the Baltic Pipe gas pipeline through Denmark. Their profitability is based on an economic forecast that gas consumption is significantly higher than in the EU climate targets.

The only way forward is to use less energy by cutting back on harmful production and switching to renewable energy – but that is the path the EU Commission has not chosen and cannot choose. It requires the management of the economy and the democratic involvement of the people, the rollback of neoliberal governing mechanisms, and a change in property relations.

Instead, the EU Commission is betting on “3 white elephants” – conversion to hydrogen economy, capture and storage of CO₂ and CO₂ quota trade. Large projects that have very little chance of success.

Growth decoupled from resource consumption ?

I have been writing this article for some time – about gas in the EU and the energy situation in the EU countries. I need to understand what energy policy the EU is actually pursuing – and compare it with fine goals of achieving “CO₂ neutrality”. It is a need I believe everyone has who wishes to fight against climate change and to change society. It is appalling that Danish society – with EU support – is in the process of expanding the gas infrastructure with the Baltic Pipe project, at the same time as it wants to cut natural gas consumption. I felt a need to understand this better.

There are two questions in particular that have preoccupied me:

- How is the EU's energy consumption and policy related to the ecological - climate crisis?
- What does the EU's great dependence on energy imports mean for the EU's global chances and desire to be a great power?

I consider myself a Marxist – and that means that the political starting point is a clear and sober understanding of society. We must look at the material basis of society, and here it is not enough to look at cash flows in the economy. We must look at the physical flows of things, chemicals, and energy, and at human interaction with the rest of nature. We must then look at how it all plays together and develops through contradictions.

Marxist Philosophy – dialectical materialism today must understand the ecological crisis, and socialists of today must be eco-socialists. The socialism we can build today is the social system that counteracts the climate crisis, and the rest of the ecological crisis. This is a global problem, and we must have a global perspective to save our planet from ecological disaster.

Growth is a basic condition of capitalism: the constant accumulation of capital requires growth in economic turnover, and since this is with physical things, it entails the destruction of functioning structures, which are replaced by new ones. It requires raw materials that are processed and sold. All this is well described by Karl Marx and Engels and a thousand others who have followed in their footsteps.

The eternal demands of capitalism for growth have permeated the ideology of neoliberalism. The demand for eternal growth is fundamentally contrary to the laws of physics – and biology, for that matter. For no living structure can continue for very long with the overexploitation of its basis of life. With the huge number of people on this planet, organized in a capitalist system, we are a threat to human existence as a species.

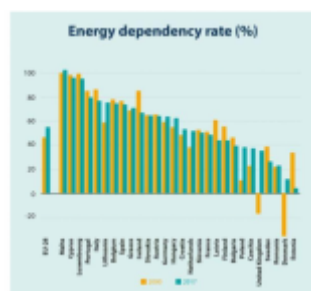
The ideologues of capitalism and the ruling class of capitalists can only imagine that growth will continue. Therefore, they present a solution that will decouple economic growth from CO₂ emissions:

The EU Commission thus presents the goal of the “European Green Deal” as being to transform the EU into a “just and rich society with a modern, resource-efficient and competitive economy, where there are no net greenhouse gas emissions by 2050, and where economic growth is decoupled from resource consumption.” “Economic growth decoupled from resource consumption!” We’ll just leave it at that for a moment – that’s how the EU Commission will stop climate change.

So far, we can see that the people and the EU are not in a position to decouple the use of resources from economic growth. On the contrary, the consumption of resources is growing year by year. If we take a single area that many may think of as disconnected from resources, the internet and data exchange, then all our devices (smartphones, computers, etc.) are very resource-intensive to produce, and are made, so they need to be replaced quickly, are difficult to repair, and produce large quantities of electronic scrap. The data we take down from the web comes from large data centers that use huge amounts of power.

EU energy dependence

EU countries are totally dependent on energy imports. The EU imports a great deal of oil, gas, uranium and coal, and the percentage of imports has grown over the last 30 years. In the past, the EU countries themselves produced about half of the raw materials for energy, but now it is much lower, and declining.



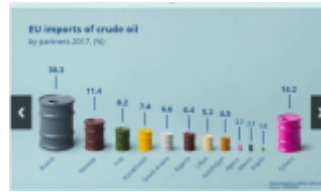
This graph of EU energy dependency in the years 2000 and 2017 is very telling. There are none – zero – countries in the EU that are self-sufficient in energy today. Great Britain and Denmark were in the year 2000, but this was over by 2017.

Where does the EU get its energy from?

Oil is the EU’s largest energy source and accounts for 42% of total consumption (in 2017). Consumption is fairly stable and has fallen by only 0.1 million barrels per day since the year 2000. Road transport accounts for more than half of oil consumption. The EU’s own oil production has been declining sharply over the last two decades. Oil production peaked in 178 million tons in 1999 and had fallen to 70 million tons in 2017 - a 60% decline. In fact, things are even worse for the EU. Because in 2017, Britain was still a member of the EU and they accounted for 65% of production. The EU without United Kingdom (UK) is even more dependent on imports. Danish production is also declining sharply.

EU countries therefore import their oil from a string of countries, primarily from Russia, Norway,

Iraq and Kazakhstan.



This is where the EU imports its oil from

Gas

The EU itself does not pump much gas up from its subsoil. Gas production fell by 9% in 2019 compared to 2018 to a total of 109 billion cubic meters (bcm). Of these, Britain accounted for 40 bcm, and gas from there will in future be considered an import. EU net imports were 398 bcm in 2019, and this was an increase of 8%. It did not become overly expensive, because the price of gas was falling.

Forty-four percent of the imported gas came from Russia - mostly via pipelines, but an increasing part also on tankers as "LNG" (Liquified natural gas). Norway was the second largest supplier with 28%, with Algeria in third place. An increasing share of EU gas imports come as LNG; 19% of EU gas imports come as LNG from suppliers besides Russia, Norway and Algeria. These figures includes an increasing import of gas from the United States.

Nuclear Energy

There are 126 nuclear reactors in 14 EU member states. They generate 25.4% of the EU's electricity. But most of the EU's nuclear power plants are old and reaching their intended lifespan. Therefore, various measures are underway to extend their lifespan. But many are already shut. Up to 2015, 91 nuclear power plants have been shut.

The EU Commission predicts that the share of nuclear power electricity production will fall from about 25% to 15% in 2050. But just to keep that share, you have to extend the life of the old reactors, and to build new ones. The EU Commission estimates this will cost around 500 billion Euros.

However, there are not many concrete plans for the construction of nuclear power plants, and those that are underway have been delayed.

The EU imports all the uranium it uses but has its own reprocessing capacity to enrich the uranium, to make it ready for use, and to dispose of it.

There are some who are in favor of massively expanding nuclear power as a pure energy source. This is a topic for another article, so here I just want to state that at the moment this is not the development that is going on, and that it requires both very large amounts of money and energy to expand nuclear power (and a shift in popular opinion, which is very sceptical of nuclear power).

Coal

Coal consumption and production are being reduced in the EU because coal is by far the worst fuel with respect to CO₂ emissions. It can also be highly polluting and contributed especially in the past to pollution and smog in many cities. Poland and Germany are still heavily dependent on coal and import a great deal of coal - especially from Russia.

1 EU Commission: Quarterly report on European Gas markets Vol 12 (issue 4, fourth quarter 2019)

Coal accounted for around 40% of EU energy production in 1990, but by 2017 this had fallen to 14% of total energy supply and 21% of electricity production. Coal consumption has halved in the EU in the same period from 445 to 228 MTOE (Million tons of oil equivalent).

It is very difficult to do without coal in certain industries, such as steel and cement production, and Poland and Germany are still almost entirely coal dependent. There is also a real risk that countries will return to coal if or when the supply of gas and oil falls.

Wind turbines and solar energy

The IEA (International Energy Agency) believes that wind will produce more electricity than gas and nuclear power already by 2025. But so far, wind turbines produce significantly less electricity than gas and nuclear power - 11.1 percent of EU electricity compared to nuclear power 25.4% and natural gas 20.3%, writes IEA.

It is especially the investment in large offshore wind farms, where Denmark is a leader, that promotes this development.

The two wind turbine islands in the North Sea and the Baltic Sea, which are planned in the new agreement on climate and industry in Denmark, point in the same direction. Denmark is generally a leader in the production of wind energy, that supplies about 40% of its electricity consumption.

Solar cells produce only 3.7% of the EU's current electricity.

The EU is thus promoting large offshore wind turbines, in particular. Another way to go could be to produce energy close to consumers, by solar cells on roofs and by smaller wind turbines that could, for example, be on top of lampposts and houses, and be good for the population in sparsely populated areas. But such thoughts do not get much support in the EU.

"Green" biofuel?

Biofuels are also considered green and renewable in the IEA, because it is the burning of biological material that has just extracted CO₂ from the air, which we grow and burn off: It goes to zero with CO₂. But it is an illusion, dream-world thinking for several reasons.

First, much more CO₂ is captured by leaving the soil wild than by humans cultivating it. If you use wood for construction, you also capture CO₂, until the house burns. But perhaps the worst thing is, that the cultivation of rapeseed, palm oil or sugar cane, which are the most common energy crops, competes with food production in a world where good agricultural land is in short supply. These crops also require energy fertilizer, machinery, transportation. It's not green.

Degassing of liquid and solid manure from large animal farms, such as pig stables and cowsheds, is better than spreading it in the fields. The manure contains large amounts of methane, a very strong greenhouse gas, which is released into the atmosphere when the manure spreader is running. Then it is better to degas and capture the methane and then burn it. The degassed manure also smells less and is thus less harmful to the local environment.

But meat production on an industrial scale is very harmful to the environment: it harms the animals, consumes great deal of energy, and emits a great deal of CO₂. The problem is when the sale of biogas becomes part of what keeps a harmful business going. Therefore friends of the climate cannot consider that kind of biogas as green. We should not oppose the degassing of manure, but it is not a strategic way forward.

Major political consequences

The EU is totally dependent on imports from outside and has a high consumption of energy. It's a classic recipe for addiction. That is why the EU cannot fight hard – neither against Russia nor the United States. The EU would be stronger if it actually cut energy consumption and switched to renewable energy. But this is not happening to a sufficient extent.

The EU partially solves the problem by diversifying – i.e. purchasing energy from as many sources as possible. Of course, this puts the EU in a stronger position with each supplier. But it is still Russia that accounts for over 1/3 of the energy and it is difficult to see how that could change. On the other hand, it must be said that there is a mutual dependency between the EU and Russia: the EU needs to import oil, gas, and coal from Russia – but Russia also needs EU money. And Russia cannot afford to cut off exports or allow others to do so, because it will harm their credibility.

In the energy chain, the EU makes a great deal of money from importing raw materials, such as crude oil and natural gas, and exporting processed products such as refined oil products and hydrogen. In this way, the European countries continues to function in an old imperialist tradition, where it is colonies and semi-colonies that supply raw materials that are processed in the imperialist centers.

But then: the EU is a weak superpower, i.e. due to the total energy dependence.

North Stream II - the gas pipeline being built in the Baltic Sea between Russia and Germany is a clear story here – a test of whether the EU, Germany, and Russia are vassal states to the United States or whether they can act against what the United States (read: Trump) dictates .

At Christmas time 2019, Trump's military budget included rhetoric stating that construction of all Russian gas pipelines to Europe is against US security interests. All companies that contribute to the construction will be affected by US sanctions. A ship from Switzerland immediately withdrew and the Russians had to send their best pipe-laying ship from the Far East.

Right now, Russian pipeline construction ships are stationed in German ports. They have just received permission to build from the Danish authorities, and there is a deadline for complaints until the beginning of August. Then the construction might start.(But now in October 2020, it is still not moving and the cooperation between Germany and Russia has deteriorated after the attempted murder of the opposition politician Navalny in Russia).

Russia and Germany has both a need to have the pipeline completed in the gas economy, but perhaps they are less hasty because demand for gas has fallen due to the corona pandemic. Russia

has also made another counterattack to US sanctions. A huge gas refinery and liquefied gas shipping port has been built on the Jamal Peninsula at the mouth of the Ob in northern Siberia. From there, 16.9 billion cubic meters of gas can be shipped a year - and the gas can be shipped to both the EU and China. An entire fleet of tankers with special icebreaker hauls transports the gas. Both the French company "Total" and Chinese capital and state have invested in the project.

The green EU?

The EU has presented "a green deal", although it is a bit unclear who that agreement was actually made with. There has been no broader dialogue with the populations, but perhaps with industries and lobby groups. The Commission has presented some radical climate targets to reduce CO₂ emissions by at least fifty percent in 10 years by 2030, and the EU should be climate neutral by 2050.

The Commission is also proud that the EU has already reduced its greenhouse gas emissions by 23% from 1990 to 2018. However, there is good reason to look critically at the numbers. First, the largest reduction in emissions is a result of the financial crisis. As a result, emissions fell sharply over a couple of years and have not really recovered. So it is rather the financial crisis (problems in the economy) than the EU's conscious efforts that have reduced emissions. In addition, a part of the EU's real emissions has been moved to other countries, for example China and Latin America, as the EU imports a large part of its industrial goods, its feed for animals, and more, from these regions.

There has also been a reduction through positive steps, through better energy economy, and through insulation of houses, improvement of engines etc. But that's unfortunately a pretty small part.

The EU's Green Deal does not address the major CO₂ offenders.

Modern human society spends most of its energy and thereby puts its climate footprint on the following:

- production of concrete - steel,
- modern construction,
- production of plastics and other chemical industry,
- Road transport, aircraft and ship traffic and production of means of transport,
- industrial agriculture,
- military and war including weapons production.
- Storage and distribution of data.

Any real green transformation of society to stop greenhouse gas emissions must therefore start by looking critically at these sectors and cutting back on production, transport, and waste.

But on the contrary, the EU Commission writes in their presentation of the "Green Deal: "Energy-intensive industries such as steel, chemicals and cement are indispensable to Europe's economy because they supply several key value chains."

Quote from Ursula von der Leyen's presentation of the EU Commission's Green Deal.

The industry itself has also been involved in writing recommendations through a special think tank with industry representatives.

Energy consumption continues to rise in the transport sector in the EU, and this is a direct extension of the fact that one of the EU's pillars is the "free movement of goods." In this context the EU has for many years invested far more in roads and aircraft than in railroads. Furthermore the favoring of local production is prohibited as "unjust competition", although this would otherwise be good for the environment and climate.

The corona crisis has paralyzed a large part of air traffic - but instead of thinking about how it can be phased out, the EU and the EU countries are pocketing large subsidies to the airlines to get it going again.

The major weakness of the EU's "Green Deal" is that it will not interfere with the production of steel, plastics, oil, industrial agriculture and concrete / cement. The free movement of goods within the EU and to and from the EU through free trade agreements is at the heart of EU policy. This will make it impossible to reduce CO₂ production, as planned in the "Green Deal" and as necessary if we are to slow down climate change. After all, the EU was founded as a Coal and Steel Union in its time and is having a hard time moving from its roots. It requires planning and restricting the rights of capital and it is contrary to both the EU Treaties and the reactionary majority of liberals, conservatives and right-wing nationalists.

Where is the military's climate footprint?

It is strange that the military is very often forgotten in the big climate accounts. For example, the IEA has made a comprehensive report of several hundred pages on Energy Conditions in the EU - but not a word about the military! There is also nothing about the military in the EU's Green Deal, but this is inconsistent with the EU giving a great deal of money to develop the arms industry in EU countries and would also like to develop an EU military. So how much greenhouse gas is emitted by the military of EU countries? That's an important question, but it's hard to say. Its probably a lot.

We know something about the US military. It is the largest single emitter of CO₂ in the world, according to a number of studies by Professor Neta C. Crawford from Boston University.

She leads the "cost of war" project and has calculated that since the invasion of Afghanistan, the US military has emitted 1,212 million metric tons of greenhouse gases. In 2017, 59 million tons were emitted - more than many industrial nations such as Sweden and Switzerland. In the report, she also writes that it is difficult to make a complete account of greenhouse gases. The military does not publish the necessary information, there are additional problems such as additives to jet fuel that can significantly increase greenhouse gas emissions. It is also extremely difficult to calculate CO₂ emissions from burning oil refineries in Syria and Iraq and other consequences of war.

We also know something about Denmark, because the Danish Ministry of Defense has made a climate account up until 2018. It states that the military in Denmark emitted 318,000 tons of CO₂ in 2018 and this was an increase of 13.5% compared to 2017. It is remarkable that the defense account does not include anything from firing ammunition, although it is quite obvious that if you fire a cannonball or a missile, or just an automatic rifle, then you use explosives, which explode - i.e. burn extremely fast and emit greenhouse gases. The climate accounts for the military also do not include CO₂ consumption in the weapons you buy.

It is clear that war is a major CO₂ sinner - just think of the amount of oil that has been burned off in Kuwait, Iraq, Syria and Libya during the wars there. This also applies when the Danish military bombs somewhere and there are big fires on the ground.

The EU and gas

The reduction in CO₂ emissions that after all has taken place in the EU, has taken place by switching from coal to gas, especially in the supply to the public at combined heat and power (CHP) plants. This creates a special gas dependence, because there is always a risk that the countries will return to the use of coal. In addition, a large part of the natural gas will be used to produce hydrogen - and to move towards a hydrogen economy in 2050.

Expansion of EU gas infrastructure

The EU is significantly expanding its gas infrastructure - so that the new pipes, LNG ports and depots will only pay off if gas consumption increases, not if it falls, as is necessary to achieve the climate goals.

A consulting firm, Artelys has made an analysis on behalf of the European Climate Fund "The European Climate foundation". Here they assess that

"The existing EU gas infrastructure has sufficient capacity to meet many different future gas demand scenarios in the EU28, even in the event of extreme supply disruptions. This suggests that most of the 32 gas infrastructure projects on the 4th PCI list are redundant to secure the supply, and represent a possible over-investment of tens of billions of EU funds, supported by European public funds. " (PCI: Projects of Common Interest) - in the field of energy - proposed by the European Commission (and approved by the European Parliament in the spring - following Artelys' report). It is unclear whether the Corona crisis will have any effect on the implementation of this gas infrastructure expansion.

PCI is a list of "Key infrastructure projects" - which receive EU support. A pipeline through Denmark - Baltic Pipe - has received a grant of 215 million Euros - about 1.5 billion Danish kroner (DKK). However, it will cost about 10 times as much to build it, 12-16 billion DKK, according to Energinet, a Danish state structure responsible for energy infrastructure. The rest will be paid by the Danish and Polish state. Denmark plans to borrow DKK 6.9 billion to build a gas line that we do not need, and that Poland basically does not need either. Thus the Baltic Pipe costs 10 times more to build than EU support, and we can probably also cautiously assume, that the 29 billion EU plans to misinvest in gas infrastructure will lead to many times grater misinvestment by the states in different countries.

The vote in the European Parliament was strange because the Parliament is not voting for or against the proposal but on a proposal to reject it. This was proposed by the Greens and was overwhelmingly voted down. The Greens and most of the left-wing group voted in favor of the proposal, but several Danish politicians with a "green" profile, including from the Social Liberals (in Danish "Det Radikale Venstre") voted against.

The infrastructure for gas

A picture of the gas pipelines from Kazakhstan, Russia, Azerbaijan and the Middle East is telling. The gas flows to the EU. In addition to these gas pipelines, ports in the EU that can receive LNG - liquefied gas - are also being built and expanded.



An overview - we might even call it a master plan for networks of gas pipelines in Europe

Gas as the EU's green fix

The EU spends a great deal of Euros on expanding gas infrastructure, and considers it an environmental advance, even beneficial to the climate.

It is true that gas produces far less local pollution than coal, and also less CO₂ emissions. But make no mistake: gas emits more than half as much CO₂ as coal.

Chemically, oil and gas consist of hydrocarbons, molecules composed of hydrogen and carbon. Roughly speaking, you can say that the heavier a hydrocarbon substance is the more carbon atoms there are in it. There is thus more carbon in oil than in gas and more in coal than in oil.

When you burn it, the hydrogen combines with oxygen and becomes water / steam H₂O, while the coal connects with the oxygen and becomes CO₂.

By converting power plants from coal to gas, there is an environmental benefit, yes. But you continue to emit CO₂ into the atmosphere. On top of that, there are many extra CO₂ costs of gas, and they increase the further away the gas comes from. And if the gas, which is mostly methane, escapes on the road, it is a powerful greenhouse gas released into the atmosphere.

Take the CO₂ consumption in Russia for the production and transport of natural gas from for example the Jamal gas district, which is located in the tundra in Siberia. It is not part of the EU's climate accounts, because it is considered Russia's CO₂ emissions. But the user of the gas is the EU.

One argument that should impress everyone, no matter if they are not that green, is that there is no gas for very long into the future. Norwegian gas reserves are already 1/3 depleted and the second third will only last 10-20 years yet. Russian reserves may last a little longer. But natural gas is not an inexhaustible resource.

European Commission favours gas and hydrogen

Commission President Ursula von der Leyen has sent a mission letter to the new Energy Commissioner, Kadri Simson from Estonia. It is probably a kind of job description, and her policy prescription is: “

Gas will have a role to play in the development towards a carbon-neutral economy, especially through carbon capture and storage. You will assess how sources of supply can be diversified – diversified at competitive prices, especially by making full use of the option of liquefied gas – LNG at a reasonable price.”

That is clear talk – gas is still in the center. It must be said that LNG in particular has a very large climate footprint even before arriving at the EU's new LNG port terminals. US shale gas is particularly bad, because a great deal of energy is spent on fracking – which is also harmful to the local environment.

Florian Ermacora, senior official of the European Commission in the Department of Electricity and Gas, calls natural gas “A fossil fuel – a dinosaur – but we need this dinosaur right now, because we can achieve massive decarbonization by replacing coal with gas,” he said on September 12, 2019, at an energy conference in Florence.

“We need gas because it can be stored, flexibly produced and more economically transported than electricity,” he continued.

Frans Timmermans, Vice-President of the EU Commission and responsible for the Green Deal, presented on 8 July the use of hydrogen, also from fossil sources, in preparation for a hydrogen economy in 2050. He predicts that 24% of the world's energy will come from pure hydrogen.

Here is a vision – a notion of where we are going. Unfortunately, clean or green hydrogen (made by electrolysis of water with electricity from renewable energy) so far is “birds on the roof”. In fact, it is not at all certain, that it can be done economically: the loss of energy is enormous due to the thermodynamics when using electricity to make hydrogen. Therefore, the demand for the amount of electricity is huge. If it is not to be fossil fuels, there are two other possible sources: renewable energy and nuclear power.

The road to hydrogen economy is paved with CO₂ emissions, because to start it, the EU will use hydrogen from natural gas.

A lot of functions will be changed to burn hydrogen, and the EU will do that with fossil hydrogen, which will later – according to the vision – be replaced with green hydrogen.

The structure of the hydrogen economy

The way the EU dreams of going is, in short, that we must have a great deal of hydrogen, that must supply a great many structures with energy. It must be produced with renewable energy and / or nuclear power and then it must replace fossil fuels.

To get there, the EU must use natural gas in large quantities. A large and increasing part of this is released as hydrogen gas already on arrival in the EU. The CO₂ that comes out of the process must be transported away and pumped down into old gas and oil fields. It is not CO₂ neutral at all, but in 10 years, or maybe a little longer, you can make green hydrogen, the EU Commission hopes.

Status of the two gas pipelines through Denmark

The Baltic Pipe construction from the North Sea to Køge Bay is underway, the excavators are running in the landscape, they are knocking in the Little Belt, and a small, active group of protesters are trying to shout at the public, that this is uneconomical and unecological. But the construction continues.

At the same time, construction of the North Stream II is still at a standstill - but not because nothing is happening.

A Russian-German consortium is in the process of building North Stream II between Russia and Germany and the construction is just over 100 km through Denmark. Construction has encountered many obstacles. The United States is categorically against, and Trump has inscribed in the US defense budget that the US imposes sanctions on Russia's gas exports to Europe. It is a gross abuse of what sovereign countries and the EU can decide and shows that the USA considers the EU countries, including Germany, as vassals you can bully. It's big politics and also trade policy, because the US exports American LNG itself and wishes to sell more. Therefore, one would like to minimize the amount of gas Russia can export. All this happened around the turn of the year 2019-20 and has been reported several times in "Solidaritet" (Danish leftwing internet journal).

Since then, Russia has sailed a plumbing ship under the Russian flag halfway around the world from the Far East, so it is now located in Mukran, a port in eastern Germany, close to the pipeline. But the ship Akademik Cherskiy has been stationary there since mid-May. Another Russian plumbing ship Fortuna has just sailed from Mukran to Rostock, on the German Baltic coast. On Monday 8 July, a Danish permit was issued to use the ship, an administrative decision, and now there is an appeal deadline until 3 August.

At the same time, the United States is coming up with new sanction threats against companies that provide shipyard repair and supply services – or inspect the pipes. It will affect "a significant number, especially German and perhaps also Danish companies," writes Jørgen B. Siemonsen, director and political scientist, in the internet journal Danmark. So, the test of strength between the USA and Russia / Germany continues and there are more obstacles of a bureaucratic nature on the way in Denmark. Maybe it bothers Germany and Russia less because gas consumption has gone down for the time being due to the corona crisis.

Future solutions?

Hydrogen: EU Commission's first white elephant

The first white elephant was presented by the EU Commission on Wednesday 8 July, by the tame Social Democrat Frans Timmermans, who is the EU Commission's Vice President, responsible for the Green Deal, and Kadri Simson, who is energy commissioner. They presented the EU's goal which is conversion to hydrogen produced exclusively by renewable energy, wind and solar. But for now, the EU will still support an increase in the production of hydrogen from fossil fuels.

But hydrogen from natural gas, oil and coal is not green – on the contrary, it is a very big climate sinner. 96% of all the world's produced hydrogen comes from fossil fuels, the commissioners said.

According to the IEA, globally 6% of all natural gas is used for it and 2% of the oil and it emits 830 million tons of CO₂ annually – a huge climate footprint. Hydrogen is used to a very large extent to add to heavy oil to make it lighter and better suited for petrol and diesel.

The technical fix

Technically, hydrogen can be produced by splitting water with electricity (electrolysis) and if you have enough electricity from wind, solar or nuclear power, you then get a fuel which, when burned, does not produce CO₂, only water vapor. The problem is that electrolysis on an industrial scale requires huge amounts of electricity, and there will be a huge energy loss by using electricity to produce hydrogen. Therefore, the technology has not matured, and the EU Commission does not believe it will mature until 2030. It is otherwise something people have dreamed of for a long time – the French science fiction author Jules Verne proposed it already in 1874, almost 150 years ago.

But the EU will so far burn hydrogen from fossil fuels, which is a major climate sinner. The excuse is that by doing so, one develops the hydrogen infrastructure that will be needed for the pure hydrogen later.

It is actually a good idea to produce hydrogen from surplus power, for example from wind turbines. People use most power during the day, when they are awake and cooking and watching computers, for example, and less when they sleep. The wind turbines run, when there is wind. So, using the power at night to produce hydrogen is sensible enough, but to make it a central focal point in the conversion of energy is pure utopia, and it is false green washing to develop the use of hydrogen produced from natural gas, that is not at all green. Hydrogen is also used to add to oil, which then becomes lighter and more combustible – so that heavier oil forms can be used. That is prolonging the oil-economy.

By 2050, the EU Commission believes that 24% of the world's energy consumption can come from hydrogen and that it will have a value of 630 billion Euros. The Commission believes that this could create one million jobs in the EU in the hydrogen value chain. It's a white elephant.

The EU will find it difficult to boost nuclear power generation. In the EU countries, there are 126 functioning nuclear reactors and they produce a significant part of the electricity in the EU. But nuclear power is on return, the plants are old and standing still for a long time due to maintenance. It is doubtful whether societies will be able to mobilize the will and economy to expand nuclear power. Wind turbine power will be able to make some pure hydrogen, but hardly enough to convert the economy to hydrogen. On top of that, there is a need for more electricity without CO₂ for many things: electric cars, computers, data centers, heat pumps, air conditioning, etc.

There is one more technical problem. The hydrogen, that society extracts with power from its wind turbines or nuclear power plants, must be compressed into containers or pipes, and it must be done well and quickly, because hydrogen is a small fast atom (usually molecule: O₂) and it speeds fast around and happily connects up with pretty much any other element along the way. (Fast and combustible, and yes, hydrogen is actually explosive).

It has been discussed to use the current gas pipeline network for hydrogen. But the systems are not built for that. Hydrogen producers and customers have proposed to allow a ten percent limit, but this has been denied and it is only allowed to pump 2 percent hydrogen in the pipes, along with the rest of the gas.

The Danish energy agreement, about climate change of the industry, which was entered into on 22 June by most of the parliamentary parties, including the Red-Green Alliance, has as a key element the production of hydrogen, just like the EU, and it is planned to use for this two new energy islands, which will receive 750 million kroner in subsidy for their construction. It is hidden in the mysterious cloak "pt-x - power to x - that is, that you use electricity to produce some fuel.

From a practical and economic point of view, the production of green hydrogen on an industrial scale is birds on the roof because it is up against strong laws of nature.

Second white elephant: Storage of CO₂

CCS is another buzzword in EU plans (Carbon Capture and Storage) sometimes extended to CCUS (Carbon Catch Use and Storage).

It is a technique where you capture CO₂ and then pump it into the underground, hoping it does not escape into the atmosphere.

Miquel Arias Canete, the former EU Commissioner for Energy and Climate, admitted at a conference in the autumn of 2019 that the CCS demonstration projects "have not been a success story so far." "We have financed a great deal of projects that did not work. We cannot continue to fund projects that do not work. But decarbonization will require that technology. We need investment this time, not to develop the technology, but to reduce costs and increase production."

CO₂ has been in surplus in oil and gas production for a long time, and it has been used to pump down into oil and gas fields under pressure, where CO₂ then pushes more oil and gas up for utilization. It is unclear how much of this CO₂ returns to the atmosphere.

Norway has the first major project to store CO₂. In the Sleipner aquifer a huge reservoir under the North sea CO₂ is removed from natural gas and pumped back. CO₂ has been pumped down there since 1996, and it is believed, that it will stay down. It is considered the major demonstration project in Europe. But the reason CO₂ has been have pumped back has not been to save the climate. It has been because the raw natural gas pumped up by Sleipner itself contains an unusual amount of CO₂ and in order to sell it the amount of CO₂ must be reduced.

CCS is expensive, even requires more energy and pollutes in other ways. It is also expensive to establish at existing power plants and industries with high consumption of oil, coal or gas. So, it is largely birds on the roof.

The climate agreement of 22 June in the Danish Parliament also agrees to spend almost 4 billion DKK in subsidies for such activities until 2030 and estimates that it will lead to a CO₂ reduction effect of 0.4 million tons in 2025 and 0.9 million tons in 2030. The support scheme has been agreed by the parties to run for 20 years. Much money for a small result - which is even weakly documented.

The third white elephant: Sale of permits to emit CO₂

Since 2005, the EU has been trying to put pressure on reducing CO₂ emissions by putting a price on it.

It works within the so-called Emissions trading Scheme ETS EU. The basic idea is that the EU sets a ceiling for how much CO₂ may be emitted in power plants, part of industry and aviation.

Permits are then issued to release CO₂, and these permits can either be sold at auctions or given away to industries, aviation etc.

The companies that then emit less CO₂ can resell their licenses and the companies that use too much CO₂ can buy.

Entire projects are an attempt to price emissions and thus give energy users a carrot to burn less fossil fuels. The surplus goes into the EU budget.

In connection with the economic crisis, there was a large surplus of permits, and the prices therefore fell a great deal.

Permits are both given away and sold at auctions and it does not take much imagination to see problems resulting in lobbying and corruption by this uneven distribution.

In 2015, the EU then added "the Market Stability Reserve", which provides flexibility over the ceiling of permits in the event of external shocks such as economic crisis and also provides the

opportunity to make discharge permits time-limited.

In total, areas covered by the ETS comprise 25% of EU greenhouse gas emissions in 2018, the IEA writes.

The money that then comes in from the auctions will be used for a modernization and an invention fund. The EU's ETS directive requires that at least half of the money received by member states be used for climate and energy-related issues. The EU expects to sell 500 million permits between 2020 and 2030 and it can bring in up to 35 billion Euros. The Innovation Fund will receive up to 12.5 billion euros which will be used for demonstration projects for renewable energy, (CCUS), and low-carbon breakthrough technologies, experiments with hydrogen, and again the so-called "power to X". Some of these activities will themselves emit a lot of CO₂.

The system may have had some effect - but the price of the permits is only a weak carrot to save CO₂ for companies and the system can become the subject of all types of political bargaining and economic obfuscation and fraud. In addition, the money that comes in will also be used for the other two white elephants, the hydrogen economy, and CCS.

Conclusion

There is a direct contradiction between the EU's declared climate goals - and thus the beautiful words about climate neutrality and the EU's actual policy.

The EU must cut gas consumption but increases gas infrastructure. The future hydrogen economy must be built with hydrogen made from natural gas and for the time being it is birds on the roof.

The EU will not intervene against the great sinners of CO₂ because they are fundamental to the economic growth necessary for capitalism. That is why the EU needs to present solutions to the climate problem that are not working.

The three white elephants — are elephants on the roof, of a porcelain shop. A completely different way forward is needed, but it must be based on popular commitment, not the EU leadership.

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Sources:

International Energy Agency: European Union 2020 Energy Policy Review. www.iea.org

Artelys: An updated analysis on gas supply security in the EU Energy transition. Final Report 20.01.20

Nyt Fokus 2: Toke Hamstrup: Energien sætter grænser for økonomisk vækst. (Energy puts limits to economical Growth)

Nyt Fokus 13: Jacob Sørensen. EU gasser op på trods af klimamål. (EU turns to more gas in spite of climate goals).

EU Commission: Quarterly Report on European Gas Markets. Vol 12, Sidste kvartal 2019.

EU Commission 11.12.19 : The European Green Deal. Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions.

Euroactiv, juli 2020: EU Commission charts path towards 100% renewable hydrogen.

The Conversation 1.1.20: Benjamin Neimark, Oliver Belcher, Patrick Bigger: US military is a bigger polluter than as many as 140 countries - shrinking this war machine is a must.

Danish Defence Ministry, Ejendomsstyrelsen: Forsvarsministeriets klimaregnskab 2018. (Climate account for the Danish Defence Ministry 2018).

Neta C. Crawford, Boston University, juni 2019: "Pentagon Fuel Use, Climate Change and the Costs of War.

P.S.

- IVP. Thursday 22 April 2021,:
<https://internationalviewpoint.org/spip.php?article6970>
- Translation by Van Presley.