COP24 CLIMATE CONFERENCE: IS THERE A PLACE FOR NUCLEAR POWER?

Climate change is gradually becoming a defining challenge mankind is facing in near future. Nuclear power, as carbon-free energy source, is an important part of the solution. It is however often excluded from the debate and resulting policies. To change this state of affairs communication initiative Nuclear for Climate was launched before COP21 climate conference in Paris. Since then it is trying to show to the public and decision makers the importance of nuclear power in climate change debate. It is however very important that everyone involved in nuclear sector contributes to growing acceptance of nuclear power.

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Climate change is one of the defining challenges mankind is facing in upcoming years. Last report of Intergovernmental Panel on Climate Change (IPCC) state that in order to mitigate global warming to 1,5°C above the preindustrial level we need to reach net zero global greenhouse gases (GHG) emissions by 2050. That's in 31 years. It's not much time... let's go back 31 years - "Rain Man" was Oscar winning film and Bobby McFerrin recorded "Don't worry be happy". And we were. Shortly after the cold war ended, many developing countries entered period of rapid economic growth. So there we obvious reasons for optimism, but at the same time greenhouse gas emissions continued to grow. Even if threat of climate change had been already known to politicians and the public for some time. An example from that exact period can be Margaret Teacher's speech to United Nations General Assembly from November of 1989. Maybe, instead of Bobby McFerrin, we should have been listening a little more to Sting, who released "Fragile" the same year...

WHERE ARE WE?

In order to mitigate the effects of climate change a fast reduction of greenhouse gases' emissions from all sectors of the economy is required. Achieving this goal requires significant changes not only in our energy sector, but also transportation, agriculture and many other sectors of the economy. Unique feature of this threat is that it is truly global and requires worldwide action. Whatever action we take however still needs to allow for economic growth in developing countries. This growth will be accompanied by increase of energy use and possible increase in GHG emissions that have to be compensated elsewhere. Especially, that in many cases those countries from so called global south did not contributed much to global emissions and at the same time will be hit be the consequences of climate change the most.

Globally however, two key elements are energy efficiency and fast deployment of affordable and reliable carbon free energy sources. The former is happening since 1970s, when gross domestic product of mayor economies started to gradually decouple from energy use [1]. Increased interest in energy efficiency was triggered by rising prices of energy sources and still remains one of key tools in reduction of GHG emissions. No matter what we do in this field if we won't succeed with the latter - the carbon free energy sources. And most predictions show that if some developed countries can reduce their energy consumption the global energy use will increase. We

COP 24: ¿QUEDA LUGAR PARA LA ENERGÍA NUCLEAR?

Cada vez es más evidente que el cambio climático es un desafío definitivo que, sin tiempo que perder, la humanidad debe afrontar. La energía nuclear, como fuente de energía libre de carbono, es una parte importante de la solución, pero suele excluirse del debate político y social. La asociación *Nuclear For Climate* nació para combatir la desinformación y, desde la COP21 de París, busca que la energía nuclear esté presente en debate. Para mejorar la opinión pública sobre nuestro sector, la implicación de cada uno de sus individuos es fundamental.

Part of Nuclear for Climate team during first week of COP24. Photo: Helge Rottschling.

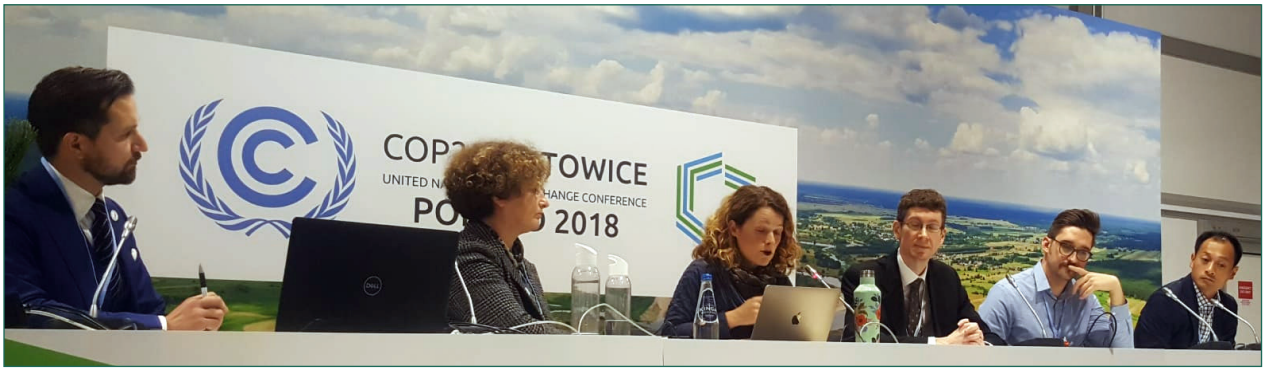
must also keep in mind that electrification of same sectors using fossil fuels, like transport and heating, will lead to increase demand for electricity even in countries where total consumption of energy will decrease.

Today about one third of global electricity comes from low carbon sources. About 30% of that, and little over 10% of total production [2], is produced in over 450 nuclear reactors in operation across 30 different countries [3]. It makes nuclear second biggest low carbon source globally, only after hydropower. And in highly developed regions like European Union and United States it is currently the biggest source of clean energy. Moreover, if we look at countries that had largely decarbonised their energy sectors (like Norway, Sweden or France) they have at least one of those two things in common: hydro and nuclear power. Swedish and French nuclear programmes proved also that it is technically possible to decarbonise electricity systems fast enough to meet our climate goals.

But let's go back again to 1988 for a while. Global low carbon electricity share was around 40% with almost half of that being nuclear [4]. In EU countries vast majority of our current reactor fleet was already operational or under construction. In fact, only 4 new reactors construction started after that year [3]. One in 1989, Civaux unit 2, the last one of very successful French nuclear programme mentioned before and three others being EPRs under construction in Finland, France and the UK. We can see very similar story is in the United States where nuclear stagnated. Meanwhile global electricity use more than doubled. In the same period nuclear electricity production grew only 40% [3], mainly due to efforts of countries with recent successful nuclear programmes, like China or Korea. And even with significant increase in use of renewable energy it was not even possible to keep share of clean electricity sources at the same level. Not mentioning reducing global GHG emissions.

And in many places nuclear power plants are being shut down. In some US states like California and Vermont nuclear plants have been prematurely shut down and they have been mostly replaced by power plants fuelled by cheap natural gas from shale. Japan's emissions went significantly up after they temporarily shot down most of their nuclear reactors. And Japan remains the world's largest buyer of liquefied gas due to the fact that the nuclear restart is too slow. Germany, despite massive investment in renewable energy (25 billion euros per year), will not achieve its climate goals. That's because renewables are used to large extent to replace nuclear power instead of coal and not the other way around. In 2015 poll 92% of Germans supported Energiewende, 43% said that the main reason was nuclear phase-out [5]. Reduction of emissions on third place with just 18%. If we want to successfully reduce GHG emissions it has to take priority.

One might ask why are so hesitant use one of the best tools we have when facing an emergency. There are several factors in play, but they can be divided into two groups. First are economical like high investment cost, high unit cost, long investment return period making them unattractive to market oriented investors and high financial risk. Related to that is loss of competences within the industry due to long period of stagnation in new builds. And there is also strong competition from cheap natural gas. The second group are political and social factors. Nuclear power in a controversial energy source. And its unpopularity among at least part of the general public causes lack of clear political support for it. And only political support may create incentives and economic environment for new investments. Therefore, it is public



Side event "Inclusive energy mix – only effective way to reduce carbon emissions" organised by N4C (left to right: Tuomo Huttunen, Valérie Faudon, Kirsty Gogan, Hal Turton, Eric Meyer, Daniel Liu). Photo: Anouk ter Brugge.

Discussion panel during event "Clean, Reliable Energy: Accelerating Emissions Reductions and Energy Security through Innovative Technology and uses of Advanced Nuclear Energy" organised by Clean Energy Ministerial and Polish Ministry of Energy (left to right: Ryan Fitzpatrick, Eric Meyer, Lena Andriolo, Frank Hiroshi Ling, Emilia Janisz). Photo: River Bennett.

support which is the key to future nuclear success.

NUCLEAR FOR CLIMATE

Unfortunately, nuclear power failed to establish itself as one of the solutions for upcoming climate crisis in the eyes of general public. Despite fact that most scientific analyses see significant role of nuclear power in climate change mitigation in public discussions it is often omitted. Some popular documentaries on the topic don't even mention it. At the same time lots of environmental groups that are setting the tone of public debate on the topic of climate change are openly antinuclear. As the result nuclear was denied its deserved recognition and seat at the table during climate talks.

The main reason to start Nuclear for Climate (N4C) was to change current state of affairs and to be a voice of nuclear energy during the climate talks. N4C was created in 2015, before COP21 in Paris. It was initiated by French Nuclear Society (Société Française d'Énergie Nucléaire – SFEN) together with European Nuclear Society (ENS) and American Nuclear Society (ANS). One of its first activities was preparing a joint declaration of 39 nuclear societies representing 50,000 scientists from 36 countries all over the world. Declaration confirmed their commitment to solving climate change issue and states that: "We proudly believe that nuclear energy is a key part of the solution in the fight against climate change."

Since then N4C was present at every COP conference, trying to convince participants that nuclear power is part of the solution and only by using all available clean energy sources we can succeed. And presenting people working in nuclear science and industry as climate heroes. Title well deserved due to fact that since 1970s nuclear power helped prevent more than 60 billion tonnes of CO_2 emissions. Its 5 years' worth of emissions from electricity sector worldwide [6]. During COP23 in Bonn N4C was able to organise its first side event during the conference. What is important, most of the N4C activities are done by young professionals, showing the public new face of nuclear industry.

THE COP24 OF KATOWICE

The 24th Conference of the Parties to the United Nations Framework Convention on Climate Change, better known as COP24, was held between 2 and 15 December 2018 in Katowice, Poland. It was the third time Poland hosted the conference. No other country, except Germany with 4 conferences, hosted it more often. Interestingly those are two top coal consumers in the EU. Moreover, Katowice is a capital of Silesia, region well known for its coal min-

Nuclear for Climate at March for Climate with appearance of our mascot "Melty the bear". Unfortunately, we were asked to leave soon. Photo: Lena Andriolo.

ing and heavy industry. And where mining is significant part of culture and regional identity. It of course led to some controversies like coal exhibition on Katowice city pavilion or volunteers with logo of coal company on their shirts. But despite initial thoughts of some participants a climate conference in coal mining region makes sense since any full solution to climate change issue should contain solutions for transportation and economic future of such regions after we phase out coal.

Wandering through countries pavilions you could find all possible solutions and actions that they propose. Except one - nuclear power. You could not find it even in pavilions of countries with well-established nuclear programmes. Probably nothing better pictures general attitude towards nuclear power at climate conferences that fact that even countries having both nuclear and natural gas choose hiding the former and promoting the latter. But natural gas companies have successfully established its image as a supplement to renewables and "transition fuel" over last years. We are very much late to this party.

Luckily, we are slowly making progress. We organised a side event - discussion panel "Inclusive energy mix – only effective way to reduce carbon emissions". And this time it wasn't the only one where nuclear power was represented. Another events were organised by IAEA and Polish Ministry of Energy respectively. Both discussing role of nuclear and featuring N4C representatives. Nuclear power was also mentioned in Al Gore's speech. Briefly and faintly, but it still some progress. We also tried to be active during other panels and even did few happenings to gain some attention.

But COP is mainly talking to other people. People from different countries, with different backgrounds. And opinions on nuclear power. And we did countless of such talks. Afterthoughts? First one is that even among delegates at COP conference sometimes knowledge about different energy sources is lower than you'd expect, and especially about nuclear. But it means that there is room for what we do. Second, there is a lot of prejudice towards nuclear power, but in many cases patience and valid arguments can make a difference. Third, is that a lot of the discussions are based on emotions rather than numbers and arguments. It is of course not always the case, but many times it is.

Of course not everyone was happy about our activities since some environmental groups are still openly antinuclear. We even made it to a bulletin made by one of them being called a wolf in sheep's clothing. We were also expelled by the organisers from the Climate March together with some Polish pronuclear activist [6]. But it backfired on organisers since we just gained some extra media attention because of that. However, it just shows how much is still to be done for nuclear power to be accepted as one of the solutions. And that we all need to act for it to happen.

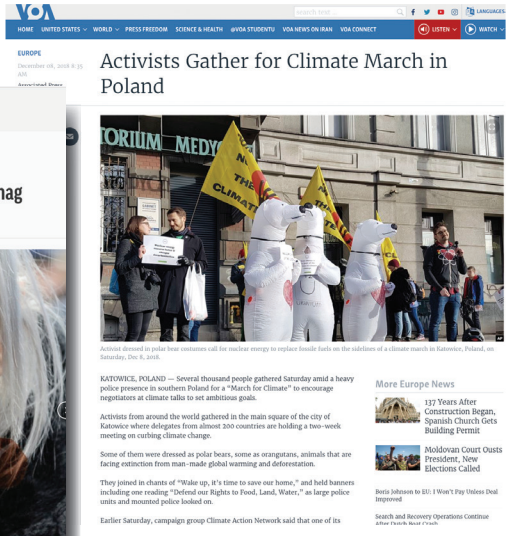
WHAT CAN WE DO?

Simply - be active. You can join us or any other similar initiative. And what's really uplifting there are more and more actions that try to show nuclear power as necessary part of the solution. Many times driven by young generation. But most importantly talk to people. To your local politicians, media and ordinary people. Patiently explain how it works, why we need it and dispel any myths. It won't be easy, it won't be fast but acting together we can make nuclear great again... or at least kind of acceptable enough as necessary in our struggle against climate change since we need to use all available tools and nuclear is one of the bests.

Sidenote to the last one : this is AP article from the march. It contains one paragraph about us being expelled. It was the copied by other news outlets. Some of them choosing our picture on the lead. Original and two other examples:

- https://www.apnews.com/8925d1fb2d174bdc8b0018730184081b
- https://www.pressherald.com/2018/12/08/activists-gather-for-climate-march-in-poland/
- https://www.voanews.com/a/activists-gather-for-climate-march-in-poland/4692206.html

Nothing groundbreaking of course, but at least couple people saw that there were some "nuclear people" there too. However in Polish social media in circles related to climate issue there was quite a lot of discussions about that. ■



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