



From the Loire to the Vistula River

Three steps in planning the energy transition

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Foreword

It is a truism to say that none of us knows as much as we all know together. For this very reason, it is worth drawing on energy transition experience of other countries. The protests of the “yellow vests”, that broke out in France last year, have also been widely covered by the media in Poland. They have become a symbol of the struggle for social justice and the sharing of public policy costs between different groups in society. The most important reason for these protests was the lack of consent to the introduction of restrictions for individual transport and the high costs of decarbonization. Many saw this as refusal from less wealthy social groups to bear energy transition costs. Likewise “climate marches” organised throughout the country were significant as well in French politics. They inspired the authorities to propose more restrictive solutions for the climate and the environment, which were the reason for protests.

So how does the government try to reconcile the interests and demands of both? In this paper we want to show how the events of recent years have influenced the planning of French energy and climate policy and what are the most important lessons learned for Poland and Europe.

In France, due to the high share of nuclear energy, the energy sector is already low-carbon. It seems that Poland and France have little in common, but the current challenges in the energy sector are similar across Europe. The ageing conventional energy fleet and the dilemma of what to replace it with, given all the limits associated with fossil fuels and the declining costs of renewable energy sources – this is our common challenge. It is also important that the authorities manage conflicts resulting from divergent interests – oil, RES, gas and other industries.

2 We hope that this study will broaden the perspective of thinking about Polish challenges in the energy sector and draw attention to the need for a systemic approach to fair cost sharing.

Enjoy your reading,

Dr Joanna Maćkowiak-Pandera

President of Forum Energii

1. Background and purpose of the analysis

Planning in the energy sector is crucial not only for climate change but also for the functioning of the national power system and security of supply. Lack of planning and investment in generation capacity creates a risk of blackout. The transition requires a deep restructuration of the energy system. The biggest challenge is undoubtedly the integration of renewable energy sources, which have a different – intermittent – working model.

Besides, strategic planning at EU level should take into account the security of national systems. Without this reference, the effectiveness of climate protection measures will be undermined. So we are going back to the first point: planning and change management is essential to the good functioning of energy systems.

It is equally important to gain public support for the changes that are being introduced. With growing income disparities, policy-makers must bear in mind that sharing costs 'equally' can be a source of resistance – that is to say regardless whether the electricity or heat bill may represent 0.01% of the family's income or 10 or 20%.

Public policy, by rethinking the way it is implemented, should help to reconcile opposing sides of the barricade. This is why planning is key to achieve it.

In this paper, we present three aspects of France's climate policy that we believe to be the most important. A similar approach in Poland would encourage the implementation of more ambitious climate and energy measures.

EU action to improve energy transition planning

In order to coordinate 28 national energy policies, the Council and the European Parliament adopted in December 2018 a Regulation on the Governance of the Energy Union and Climate Action (the so-called *governance regulation*). It requires Member States to develop *National Energy and Climate Plans* (NECPs) for the next ten years (2021–2030) and long-term strategies for at least thirty years (2050).

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Why giving the example of France? A short story about energy and climate policy in recent years

The case of France is interesting as an equivocal one. Ambitious climate targets and strategies meet there with social resistance or fail to produce results and then need to be corrected. In this analysis we try to show objectively the positive and negative sides of the French climate and energy policy implementation .

In European Climate Foundation's *Planning for Net-Zero* study, France ranked second out of 28 in terms of plan quality, just after Spain¹, where Minister for Energy Teresa Ribeiro is a former President of Institut du Développement Durable et des Relations Internationales (IDDRI), the French think tank on sustainability strategies. It is worth having a look at the management of the energy transition in France in order to grasp the ingredients of good planning and to analyse public policy mistakes made by the government.

Since the success of COP21, the French government has been building upon its climate-friendly image, gained at a key moment in international climate negotiations. France seeks to continue to lead the implementation of the Paris Agreement. The new direction of the energy and climate transformation enjoys particular attention in a country where drafting strategies is almost a national hobby. In 2015 France was one of the first countries in the world to adopt a strategy to cut greenhouse gas emissions fourfold by 2050. This strategy, assessed as the most progressive by WWF out of 13 other national strategies, has become a basis for other documents such as:

1 Ref. <https://europeanclimate.org/wp-content/uploads/2019/05/Planning-for-Net-Zero-Assessing-the-draft-NECPs.pdf>

- Multiannual Energy Plan (updated every five years²),
- Climate Protection Plan,
- Plan for the Renovation of Buildings
- other regional and local plans.

What is more, France has recently adopted a new law making climate neutrality a binding target for 2050.

Marches for Climate and the “Case of the Century”

However, it appears that French authorities must make policy adjustments. For example, the reduction in emissions is not as significant as expected. On this ground, a coalition of NGOs accused the government of not meeting the legal requirements in this area. Within a few weeks, more than two million people have signed a petition to initiate legal proceedings. According to plaintiffs of the so-called ‘Case of the Century’ (L’Affaire du Siècle), the State is responsible for the lack of action against climate change³. As a result of growing social pressure, the government was bound to adjust climate policies and planning.

“Yellow vests”

In the meantime, thousands of French people in yellow vests protested against the cost of the transition. The government’s project to raise the carbon tax met with great opposition, mainly from suburban residents, who had no choice but to use their cars to for commuting to work. The symbol of the movement was the statement of one of the demonstrators: “They recall the end of the world, and we speak about the end of the month.”

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At opposite sides of the barricade

Both poverty and climate issues were at the top of the French political agenda. In Spring 2019, youth climate marches were organized every Friday, and “yellow vests” demonstrations took place every Saturday. This required a specific approach to public policy-making. It is worth noting that these events have not stalled the momentum for climate action in France, but rather put forward a new approach to policy-making. In order to achieve a fair transition, accelerating emission reductions should be coupled with dedicated measures for modest households. Most importantly, both events have shown that climate policies and strategies must be designed with the participation of citizens to ensure their acceptance in the long term.

2 See https://www.ecologique-solidaire.gouv.fr/sites/default/files/4pages_PPE_GB_DEF_Web.pdf

3 See <https://laffaireduisiecle.net/>

2. Main conclusions

The protests of the “yellow vests” did not stop the government’s ambitions to achieve climate neutrality by 2050. Demonstrators called on decision-makers to improve the *governance* framework to ensure that long-term strategies are ambitious and fair for society.

The three most important steps to achieving climate neutrality in France

1. Precise definition of long-term objectives.
2. Involving citizens in drafting the climate strategy and ensuring its public acceptance.
3. Establishing an independent body responsible for assessing and monitoring the long-term decarbonisation strategy.

Energy transition state of play in France and comparison with Poland

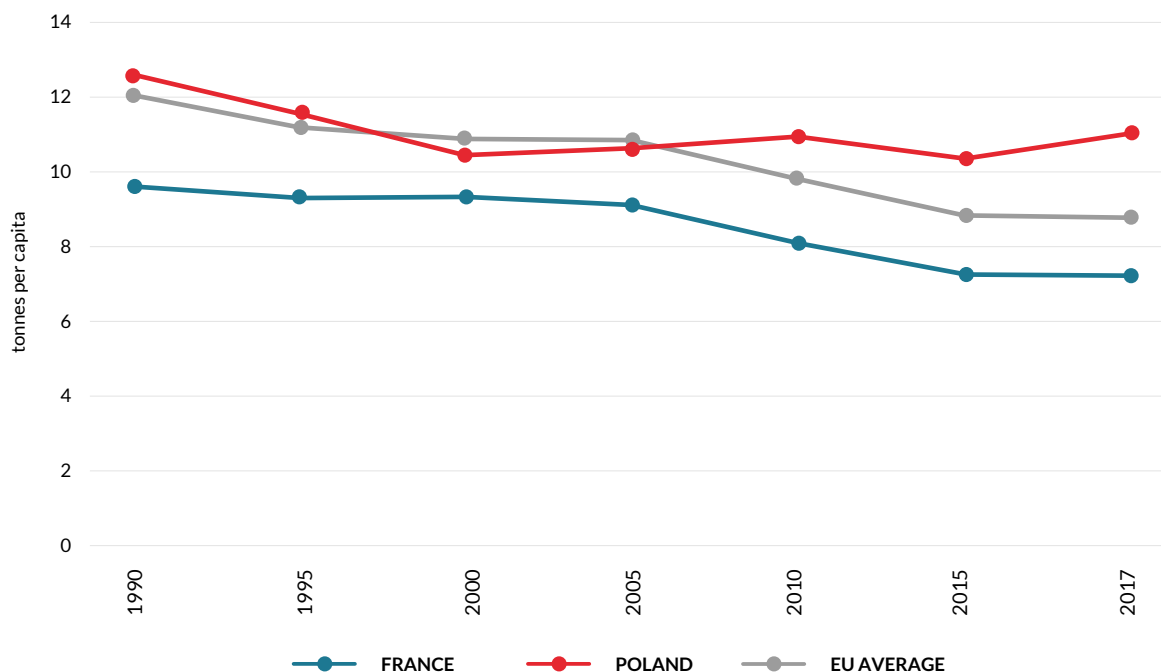
As soon as 2009, France adopted the Grenelle Act, which aimed to reduce the country’s greenhouse gas emissions fourfold by 2050. France was one of the first countries in the world to adopt a national low-carbon strategy for 2050.

Such energy and climate efforts may seem surprising to Polish readers when looking at the French energy mix. By 2016, power generation was decarbonised at 91%. This stems from a historic choice made in the 1960s, to base the energy system on nuclear energy. The rationale of these decisions was the quest for energy independence.

Nowadays, nuclear energy is a source of increasing concern. The operation of ageing units costs more and more, security standards are becoming stricter and public concerns about safety and management of radioactive waste are growing. Besides, maintaining a large share of nuclear energy slows down the development of renewable energy sources. A system based on large conventional units is generally inflexible, while RES development requires high network flexibility and dynamic prices. The new Energy and Climate Act passed in September 2019 provides for a gradual reduction of the share of nuclear energy in the power mix to 50% by 2035.

Despite low-carbon electricity generation and declining trends, total GHG emissions in France remain very high. In 2017, total emissions amounted to 482 million tonnes of CO₂ equivalent, accounting for 10.8% of EU-28 emissions (Eurostat 2019⁴) (Figure 1).

4 See <https://ec.europa.eu/eurostat/statistics-explained/pdfscache/1180.pdf>

Figure 1: Level of greenhouse gas emissions in France and Poland between 1990 and 2017⁵, Kyoto method.

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Source: Own calculations based on Eurostat data, 2019.

Between 2005 and 2015, France reduced emissions by 1.5% annually, mainly due to a reduction nearly by half in the manufacturing industry. This has been achieved through improvements in energy efficiency and the curb of emissions by 40% from the power industry. Coal and oil-fired power plants were gradually replaced by gas-fired power plants, while the increase in demand was met by nuclear and renewable energy⁶. However, it is worth noting the significant increase in transport emissions – by 10% for domestic transport and up to 40% for international transport since 1990.

In 2017, greenhouse gas emissions from all sectors (except LULUCF – Land Use, Land-Use Change and Forestry – and maritime transport) amounted to 7.2 t per capita in France.

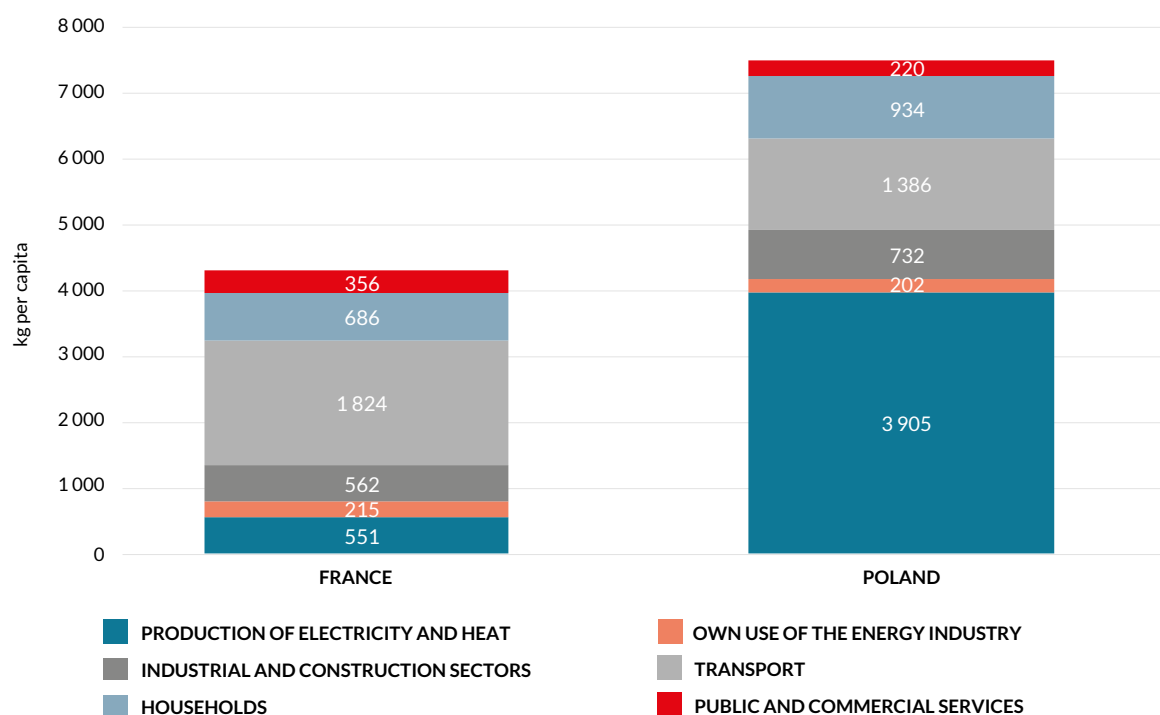
In Poland, we observe the opposite phenomenon. After a decrease in the years 1988–2000, greenhouse gases emissions do not decline anymore, reaching up to 11 t per capita in 2017 (Figure 1). The EU average is 8.8 t (Eurostat, 2019⁷).

⁵ As defined by the Kyoto Protocol. Greenhouse gas emissions are carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O) and fluorinated gases, i.e. f-gases including hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF₆) and nitrogen trifluoride (NF₃). Because of the individual GWP (global warming potential) of each gas, they are integrated into a single indicator expressed in terms of CO₂ equivalents.

⁶ French High Council on Climate Change, Annual Report 2019

⁷ See https://ec.europa.eu/eurostat/databrowser/view/t2020_rd300/default/table?lang=en

Figure 2: Distribution of CO₂ emissions from fuel combustion by sector in France and Poland, 2016.



Source: Own chart based on data from the International Energy Agency (IEA), 2018.

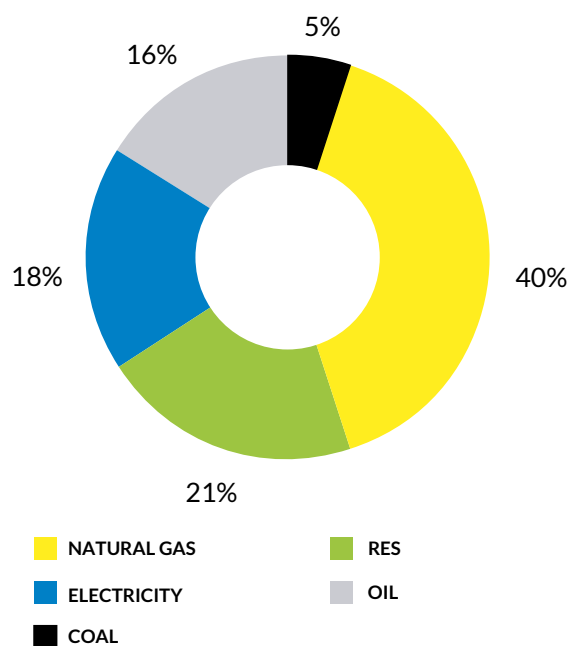
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Figure 2 shows that CO₂ emissions *per capita* in Poland are 7.6 t, and in France 4.3 t. The difference observed is mainly the result of diverging power and heat generation mix (in Europe 5.5 t).

Figure 3 shows the total heat production in France, which supplies the building sector at 65% and the industry sector at roughly 30%. Gas is the main source of heating in France, accounting for 40% of final heat production in 2016, ahead of renewables (21%), electricity (18%) and oil (16%).

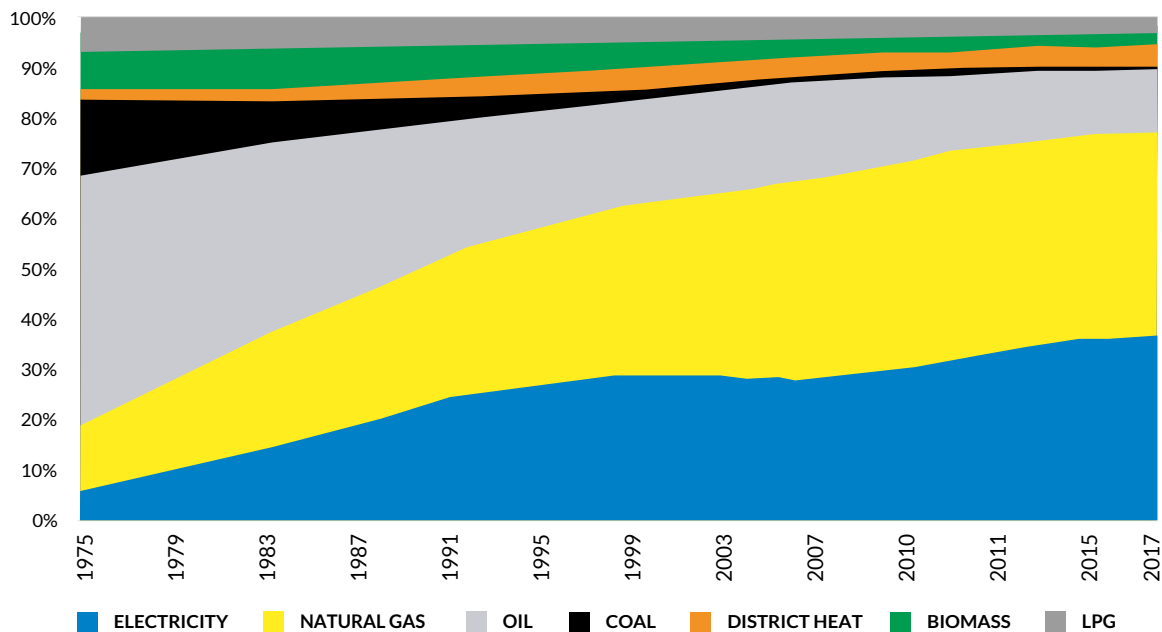
In France (2016), heating accounts for 42% of final energy consumption (741 TWh). The 2019 Energy and Climate Strategy foresees a reduction in heat demand to 690 TWh by 2023 and 635 TWh by 2028, which should lead to emission^areductions.

Figure 3: Structure of final heat production in France in 2016



Source: own elaboration based on the French draft NECP national energy and climate plan, 2019.

Figure 4: Domestic heating mix in France 1975–2017



Source: Housing sector – monitoring of building condition and energy consumption, Centre for Economic Studies and Energy Research (CEREN), 2017.

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Chart 4 presents the dominating share of gas and electricity in the mix of individual household heating sources. Interestingly enough, only 5% of French households are supplied by district heating.

Since 1970, the share of oil heating has significantly decreased and coal heating has almost disappeared from individual heating. The decrease of equipment in highly emissive heating appliances, combined with a decrease in final energy consumption, has led to a fourfold cut on CO2 emissions in the domestic heating sector since 1970's⁹. According to the National Low Emission Strategy, by 2050 fossil fuels are to be eliminated from domestic heating, except for a small amount of gas.

9 CEREN – Résidentiel Secteur – Suivi du parc et des consommations d'énergie, juillet 2017 (Housing sector – monitoring of building conditions and energy consumption), Centre for Economic Studies and Energy Research (CEREN), 2017).

3. Three milestones in energy transition planning

France has achieved significant emission reductions in the last 50 years. Its approach to energy transition is worth of analysis, especially when Poland is required to develop a strategy by 2030 and 2050 within the new Energy Union framework.¹⁰

We present three French actions for planning the energy transition, which may be useful also on the Polish ground.

3.1. Firstly – the definition of long-term transition targets

The objectives of the French Energy and Climate Strategy are set out in two main documents:

1. Multiannual Energy Plan until 2023 and 2028. (Programmation Pluriannuelle de l'Énergie),
2. National Strategy for a Low-Carbon Economy 2050 (Stratégie Nationale Bas-Carbone).

The national climate and energy plan required at EU level was based on these documents. Compared to the EU requirement to set up a plan to 2030, the time horizon of the French Multiannual Energy Plan may seem short. The rationale lies in a 5-year policy cycle, in line with the Paris Agreement framework which requires a regular review of the strategy in the light of technological progress. The 2019 Draft Energy and Climate Strategy revised the fossil fuels primary energy consumption target from 30% to 40% in 2030 (compared to 2012 reference), which shows progress from the previous 2015 strategy. In addition, the draft Strategy for a Low-Carbon Economy sets an objective of climate neutrality to reach by 2050.

Then a draft Energy and Climate¹¹ Law was prepared to translate the strategy into legislation and to set additional targets to be achieved by 2030. The parliamentary debate significantly contributed to extend the scope of the law. Among other things, new actions were planned to achieve the set targets, including in the field of renovation of buildings, which was in crucial need of reforms. In addition, an intermediate target for energy consumption reduction was introduced (7% by 2025) and the target for renewable energy was increased from 32% to 33% by 2030, in line with the European Commission's recommendation to France¹². This will require more effort from policy makers, as the share of renewable energy sources in 2017 only reached 16.3%. RES targets for each sector are set by law since 2015. By 2030 renewable sources should account for 40% of power generation, 38% of final heat consumption, 15% of transport fuels (biofuels) and 10% of gas consumption (biogas). The law also introduced targets for renewable and low-emission hydrogen, which should reach 20–40% of total consumption by 2030.

Another good practice is the so-called system of carbon budgets, which sets maximum limits for greenhouse gas emissions in a given period of time. In force since 2015, it allows for close monitoring of progress within a five-year cycle reduction target as required by the Paris Agreement. Carbon budgets cover different sectors of the economy, not just energy. There is therefore a need to develop action plans for buildings, transport, agriculture, industry and waste management sectors. The related targets are no longer limited to increasing the share of renewable energy sources in the energy mix or improving energy efficiency. Indication of carbon budgets is crucial for the implementation of climate neutrality by 2050, which is currently under discussion in the European Union. The European Commission wants to encourage Member States to achieve a balance between greenhouse gas emissions and removals.

¹⁰ Regulation (EU) 2018/1999 of the European Parliament and of the Council of 11 December 2018 on the management of the Energy Union and climate action

¹¹ The text of the Energy and Climate Change Act after the completion of parliamentary work, submitted for vote in September 2019. See <http://www.assemblee-nationale.fr/15/ta-commission/r2193-a0.asp>

¹² See https://ec.europa.eu/energy/sites/ener/files/documents/fr_rec_en.pdf

Carbon budgets allow to monitor progress on an ongoing basis, identify gaps and implement adjusting measures. For example, at the end of 2018, as a result of France's exceeding of its carbon budget for 2015–2018,¹³ the Government and Parliament proposed additional measures to comply with the target: in April 2019 the government issued a second version of the draft Energy and Climate Act with a more ambitious content than in the previous version.

Table 1: Planned carbon budgets for the economy sectors

Average annual emissions (Mt CO ₂ ec.)	Reference years			First carbon budget	Second carbon budget	Third carbon budget	Fourth carbon budget
	1990	2005	2015				
Period	1990	2005	2015	2015–2018	2019–2023	2024–2028	2029–2033
Transport	122	144	137	127	128	112	94
Buildings	91	109	88	76	77	58	41
Agriculture /Forestry	94	90	89	86	82	77	72
Industry	144	115	81	80	72	63	53
Energy generation	78	74	47	55	48	35	30
Waste	17	21	17	15	14	12	10
Total (without LULUCF)	546	553	458	442	421	357	299
Total (including LULUCF)	n/a	n/a	417	n/a	383	319	257

Source: France's National Low-Carbon Strategy, 2018.

Recommendations

In order to address decarbonization challenges, a clear long-term strategy is needed, but also concrete policies and measures to achieve the defined objectives. To step up the level of ambition, drafting a strategy should begin with a broad reflection on where the country wishes to stand in 10, 20, 30 years' time. Once targets set, the strategy should be worked out through analysis of a range of scenarios, depending on different economic and technical hypotheses. This combination of top-down and bottom-up approaches makes it possible to define a strategy that is optimal for both the economy and society. Furthermore, detailed policies and measures should be provided to support the objectives outlined and ensure their realistic achievement in due time.¹⁴

¹³ In 2015–2018, the deficit was estimated at 72 Mt CO₂ equivalent, or +4% of the target; based on the National Base-Carbone Project for Stratégie Nationale, Ministère de la Transition Ecologique et Solidaire, décembre 2018 (Draft National Strategy for a Low-Emission Economy 2050, French Ministry for Ecological and Social Transformation, December 2018).

¹⁴ See <https://forum-energie.eu/pl/analizy/pep-2040-uwagi>

3.2. Secondly – public debate and social consensus

Public participation is essential in the planning of public policies. The decarbonization strategy, in return for a secure future and living in a clean environment, will impose certain limitations or constraints on citizens, such as the need to change their habits and support costs.

Developing a participative climate governance framework could help to avoid public policy deadlocks and volatility of political decisions influenced by particular interests.

The “Yellow Vests” movement is an example of the failure of public policy implementation, because measures were introduced under time pressure without wider public consultation. The aim of the regulation was to effectively reduce emissions in the transport sector. The carbon tax on fuels would gradually increase over the years to direct citizens’ habits towards a more climate-friendly lifestyle.

The government failed to see how the carbon tax mechanism in transport would affect poorer citizens living on the outskirts of cities. The middle class had chosen to live in the suburbs due to lower housing prices. They purchased cars thanks to the “ecological bonus” – a financial bonus granted at a time when diesel cars were considered clean. The demonstrators rejected an elitist institutional system that did not take into account the needs and capabilities of the middle class. They called for ordinary citizens’ needs to be taken into account as well, and claimed a referendum on all the laws introduced.

Given the uproar, the government organized a “Great Debate”, leading to several proposals from the government, including the establishment of a Citizen Convention for Climate (Convention Citoyenne sur le Climat). The first session of the Convention, in September 2019, will be attended by 150 randomly selected citizens who are to propose reforms and solutions necessary for climate and energy transition. Depending on nature of proposals, they shall be examined by Parliament or in a referendum or, directly put to the vote. They aim at accelerating the energy transition and decarbonization with the full participation of citizens.

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The Economic, Social and Environmental Council (Conseil Economique, Social and Environnemental) will ensure the proper functioning of this unusual body and the organisation of its meetings. It consists of civil society experts, whose role has so far been limited to providing consultative advice on draft laws. A special committee within the Council will ensure respect for independence and deontology principles, as well as technical and legal assistance in translating the conclusions of the Convention into law¹⁵.

Recommendations

Changes to the energy system, ambitious energy efficiency goals, transformation of the transport system can be perceived by society as revolutionary changes. Only intensive social dialogue, consultation and fair sharing of costs (taking into account varying levels of wealth) can lead to a social consensus. In implementing such serious reforms, the various interests of professional and business groups and even international interests collide. One of the forums for dialogue is the Citizen Convention proposed by the French President. At the same time, energy and climate regulations which incur additional costs should be accompanied by a package of protective social measures.

3.3. Thirdly – an independent council monitoring the progress of the transition

The most important change in climate management in France is undoubtedly the creation this year of the High Climate Council (Haut Conseil pour le Climat). It aims to strengthen the implementation of long-term climate and energy strategies through independent experts to ensure that they are implemented regardless of specific political interests and electoral cycles¹⁶. In the UK, the Climate Change Committee, which has been in place since 2008, has been carrying out a wide range of legislative activities. It has the powers and resources to do so. It provides a real contribution to the design of climate-friendly public policies through regular publication of reports assessing progress towards climate targets and concrete policy recommendations on complex decarbonization issues. The British Committee has already inspired several countries in Europe to set up expert teams to monitor the energy transition: Germany in 2011, Denmark in 2014, Ireland and Sweden in 2017¹⁷.

The French High Council replaced the Expert Committee for Energy Transition (Comité d'Experts pour la Transition Energétique), whose role was limited to giving opinions on draft energy and climate strategies and progress in reducing emissions. It also lacked real powers and financial resources. The High Council, on the other hand, has its own budget and makes recommendations itself, which guarantees its independence. Members may not seek or accept instructions from any government or other public or private entity. The Council shall consist of a Chair and 12 members nominated by decree based on their scientific, technical and economic expertise in climate sciences and greenhouse gas emission reduction. Their role is to evaluate whether the French low-carbon strategy is implementing the Paris Agreement and to warn in case public policy decisions are not coherent with the set targets. To this end, it is responsible for:

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- each year, a progress report on the implementation of the emission reduction targets and an assessment of public policies implemented towards it,
- every five years, a report on the development of the National Low-Carbon Strategy, with a comparison of other countries' policies and measures
- regularly, recommendations for concrete policy measures to comply with the national decarbonisation path¹⁸.

On top of that, the Council of Ministers has established a Council of Ecological Defence (Conseil de Défense Ecologique), which brings together the key ministers¹⁹ necessary to carry out the ecological transition. It is responsible for the compliance of all state policies with the ambitious objectives of climate protection and biodiversity. The first Council session in June 2019, inter alia, introduced a systematic test of environmental compatibility of all budgetary decisions, the financing of EUR 3 billion loans for daily transport and EUR 1 billion for the renovation of social housing. In addition, the High Climate Council will report annually to the Ecological Defence Council on progress toward decarbonization targets.

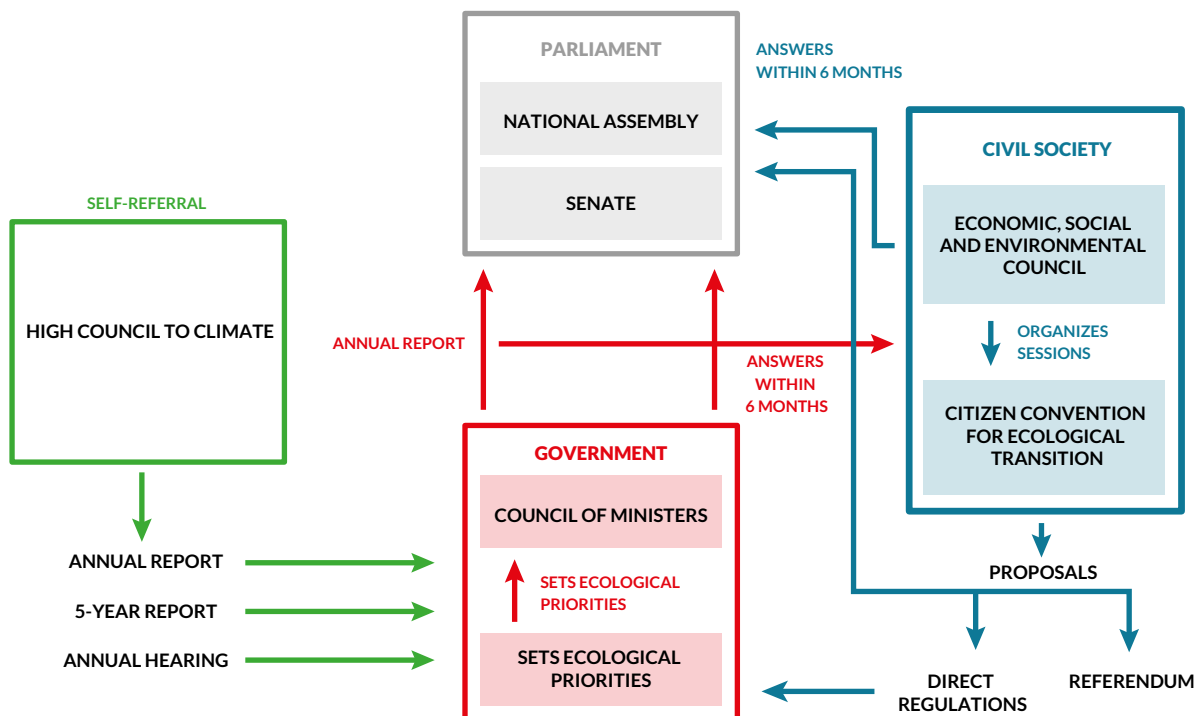
16 D. Gozillon, Reforming the European climate governance after the Paris Agreement: case study of the French energy and climate strategy, Master thesis, Institute of Political Studies of Paris, May 2019

17 Zob. <https://www.iddri.org/en/publications-and-events/study/uks-committee-climate-change>.

18 See <https://www.hautconseilclimat.fr/>

19 The French Ecological Defence Council brings together ministers for ecological transformation, economy, budget, foreign affairs, agriculture, health, housing, local authorities and overseas territories.

Figure 5: Energy and climate institutions in France in 2019



Source: Own calculations based on the annual report of the High Council to Climate and the official websites of the institutions.

The present blueprint displays the three new climate and environmental institutions as well as their interactions with political institutions: The High Council to Climate, the Council for Ecological Defence, and the Citizen Convention for Climate.

Recommendations

Independent expertise on energy and climate policies is crucial at a time when the EU and world governments need to take ambitious political decisions on climate and energy issues. Economic, social and environmental impacts must be precisely assessed on a long-term perspective. Continuous monitoring of progress and reliable information for the public are essential.

In this regard, the creation of an independent expert body, such as the French High Council to Climate, would definitely support the planning of the Polish energy transition.

4. Conclusion: there is no decarbonization without strategic planning, dialogue and independent monitoring

The example of France shows that reform of energy and climate governance is needed to achieve an ambitious decarbonization strategy. The failure of the EU and other countries to meet their targets will be increasingly less acceptable and will have serious international and economic repercussions. As public awareness of climate change effects increases, political pressure to act will also increase.

Firstly, long-term planning is essential both for climate and energy security. Ambitious targets should be set in regular time horizons, e.g. in the form of five-year carbon budgets, to be monitored on an ongoing basis.

Secondly, the 'Yellow Vests' protests have shown that drafting climate strategies and addressing social concerns must go hand in hand. The public policy process must, from the outset, involve the public, provide room for concerns and offer support if some regulation may worsen the citizens' conditions.

Last but not least, thirdly, an independent body of experts should be in charge of monitoring progress towards the objectives, and to issue proposals for additional policies within the energy and climate strategy framework.

Perhaps it is too early to announce the success of the new French energy and climate governance framework. Although social climate seems calm for the time being, it is uncertain whether "yellow vests" movements may still occur, especially since they have had such a big impact on society. The effectiveness of the new bodies set up in mid-2019 is yet to be assessed. However, these French experiences are undoubtedly a source of inspiration for the energy transition in Poland and in Europe.

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It may seem that they bring nothing exceptional. Their critics will probably state that in Poland we are fond of setting up committees, and all kinds of councils, and consequently that we do not need any more. They will also say that strategic planning ends with multi-page documents that no one can read nor implement. Then they will criticise the level of public debate that does not exist or takes place on the street.

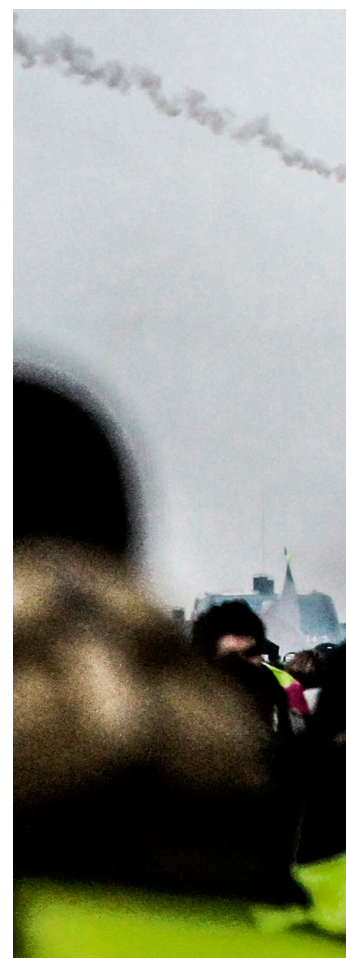
But when, if not now, to look for a transformation to a governance model in which we do not fight but simply listen and support each other. Poland must rebuild its energy system, as smog is damaging the health of Poles. Perhaps instead of inventing new collaboration formats, you need to focus on the proven ones. Just imagine Poland in a few decades, discuss and confront your visions with others, identify in due time the steps that will lead us to these visions and consult them with experts. For none of us know as much as we all know together.

Notes

Notes

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