The Quest for the Future Energy Mix in the EU and in Switzerland

Fighting Climate Change and/or Promoting Security of Supply?

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Abstract Switzerland and the European Union (EU) face similar challenges when it comes to the decarbonisation and securing of energy supply. Both lack sufficient domestic energy resources, apart from nuclear energy. But nuclear energy has become controversial after the nuclear meltdown accident at Fukushima, Japan, in 2011. Without reconsidering nuclear energy as a future energy resource, the cooperation in the energy market between the EU and Switzerland becomes even more vital for securing energy supply. While in the past, Switzerland has fulfilled an important function in securing energy supply in neighbouring EU Member States, lately, the EU has provided for its own governance for emergency situations. However, Switzerland will maintain its function as an interface in the electricity sector. This is even more true, since the new focus on renewable energies fosters the demand for flexible cross-boundary solutions. An electricity agreement between Switzerland and the EU might provide a stable legal framework for these developments. The price to pay for Switzerland will be a further opening of the market, offering the private consumer a choice of energy providers. The good news for Swiss

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strategies for promoting renewable energies is that EU Member States are still allowed to take a flexible approach towards national promotion measures, especially in designing them to their territory. Therefore, the cooperation between Switzerland and the EU offers some advantages in terms of flexibility in the quest for security of supply while fighting climate change.

1 Similar Challenges

As highly industrialized European states, Switzerland and the Member States of the European Union contribute to climate change based on the greenhouse effect in a similar way. Both respond to this responsibility by similar self-binding commitments for reducing the emissions of greenhouse gases under the Paris Agreement, like before under the Kyoto Protocol, especially concerning CO₂ emissions.¹ At the same time, both have to fulfill their constitutional resp. primary law based obligations to secure an adequate supply of energy in the national² resp. supranational³ framework.

Notwithstanding the diversity of the EU Member States, the EU and Switzerland face comparable challenges. Moreover, during the period covered by our research in SCCER CREST (since 2013), they have responded to these challenges in a similar manner, despite their autonomous, independent policy approaches. An important reason for this is that—although differences in detail may exist—neither the EU Member States nor Switzerland possesses significant domestic energy resources. Notwithstanding nuclear energy and the important, but limited, part of hydropower, Switzerland cannot rely solely on domestic energy resources. Similarly, nuclear energy still plays a decisive role in the EU. Besides, some Member States can rely on coal resources. But this energy resource is detrimental to the climate and too small to secure energy supply in the Union. Furthermore, it is a cost-intensive energy resource. In addition, natural gas available in some EU Member States has

¹Switzerland ratified the Paris Agreement on 6 October 2017 and has accepted reduction targets of 50% by 2030 as compared to 1990. For 2050, there is a common reduction target of 70 to 85% as compared to 1990. Both targets include a partial use of emission reductions abroad. See Federal Office for the Environment (FOEN), The Paris Agreement, available at <https://www.bafu.admin.ch>. The EU ratified the Paris Agreement on 5 October 2016. In the Nationally Determined Contributions (NDC) of the EU in the framework of the Paris Agreement, the reduction target for greenhouse gas emissions amounts to 40% by 2030 as compared to 1990. See European Commission, Paris Agreement, available at <https://ec.europa.eu>.

²See the objective of a sufficient (“*ausreichenden*”) energy supply according to Art. 89 para. 1 Federal Constitution (FC) as a task for the Swiss Federation as well as for the Swiss cantons.

³See the task to “ensure security of energy supply in the Union” according to Art. 194 para. 1 lit. b TFEU.

diminished considerably over the last years.⁴ Last but not least, the petroleum in the North Sea is less profitable due to the low prices for petroleum on the world market.

Against this background, it is understandable that the EU and Switzerland are eager to conclude a bilateral electricity agreement. Despite the great mutual understanding in the negotiations, these have been stopped due to the demand by the EU to first conclude an Institutional Framework Agreement, which would grant the European Court of Justice (ECJ) a considerable role in legal disputes.⁵

Hereinafter, the focus will be on the development of interests of the negotiation partners with regard to promoting certain energy resources. Regularly, the objectives of the EU are identified as promoting security of supply—especially with reference to the blackout in Italy in September 2003—, stable and affordable prices and balancing effects with regard to the feed-in of electricity from renewable energies as well as fostering competition.⁶ From a Swiss point of view, with reference to the Energy Strategy 2050⁷ one has to mention the fostering of security of supply, better market access, especially for so-called balancing energy, as well as stabilizing the Swiss function of an “electricity hub for Europe”.⁸

2 Development of Energy Resources

2.1 Nuclear Energy

The EU only has a limited legal basis for regulating the choice of energy resources. The provisions on energy regulation in Art. 194 TFEU leave a lacunae in this regard. But under the competences on the environment, Art. 192 para. 2 TFEU allows for regulating the choice of energy resources; however, unanimity is required. Therefore, any single Member State can block a legislative decision. It is true that promoting nuclear energy is a task of the EU, provided for by the Euratom Treaty. However, the treaty does not include an obligation for Member States to do so. The focus of the work under that treaty has shifted to safety in the field of nuclear energy.⁹

In the end, the possible acceptance of nuclear energy in the Member States has never been harmonized on the EU level, allowing for a divergent development. While some Member States, such as the so-called Visegrad-States and the United

⁴Heselhaus and Becker (2019), p. 249, 256 et seq.

⁵For details, see Hettich et al. (2015), pp. 3–4.

⁶Hettich et al. (2015), p. 6, with further references.

⁷Federal Council Dispatch on the Swiss Energy Strategy 2050 (*Energiestrategie 2050*), see Federal Council (2013), p. 7580 et seq.

⁸Weber and Kratz (2009), § 7 n. 25.

⁹Classen (2011), n. 16.

Kingdom, opt for modernizing and enlarging nuclear power plants,¹⁰ others, such as France, have decided to reduce nuclear energy at least in some parts, even if supply remains on a comparatively high level. Other Member States have never been into nuclear energy, like Austria and Italy, or are exiting from nuclear energy in the aftermath of the nuclear meltdown in Fukushima in 2011, like Germany, where the last reactors will be taken off the net in 2022.¹¹

So, the development of the EU policy in the area of nuclear energy is ambivalent. After Fukushima, the basis for running reactors has been to pass the so-called stress test, designed to check the security of all reactors in use. At the request of the European Council in 2011, the group of national surveillance authorities ENSREG (European Nuclear Safety Regulators Group) set up methods, the extent and the procedure of the stress test.¹² After the completion of the tests in 2012, all reactors could be kept in use. In the recent past, some reactors have been put off the net due to minor incidents. In a Belgian case, the ECJ decided that restarting the operation of a nuclear power station that had previously been shut down is basically allowed, even after a longer period of time. However, an environmental impact assessment has to be carried out.¹³ In the European legal context, that leads to the participation of the public. Therefore, the risks of re-operation of nuclear power plants will be discussed in public.

According to a ruling by the Swiss Federal Nuclear Safety Inspectorate (*Eidgenössisches Nuklearsicherheitsinspektorat* [ENSI]), the operators of Swiss nuclear power plants were required to take part in the EU stress test, too. In their assessment of the Swiss country report on the EU stress test, the EU experts concluded that the Swiss nuclear power plants fulfil all the international requirements in all areas. Emphasis was put on the proactive measures of the Swiss Federal Nuclear Safety Inspectorate after Fukushima, on the seven safety layers of the Swiss nuclear power plants, as well as on the protection against a loss of the ultimate heat sink, i.e. cooling the reactor. Only with regard to extreme weather conditions and hydromanagement in case of severe accidents, the experts recommended further testing.¹⁴ According to ENSI, there is an adequate framework for a systematic management of ageing in Swiss nuclear power plants. So, possible damages by ageing can be detected already in an early stage and countermeasures can be taken.¹⁵

¹⁰Heselhaus and Becker (2019), p. 249, 256 et seq.

¹¹13. *Gesetz zur Änderung des Atomgesetzes*, regulating the exit from nuclear energy and accelerating the energy U-turn, German BGBl. 2011 I p. 1704 ff.

¹²ENSREG (2011).

¹³ECJ, C-411/17, ECLI:EU:C:2018/972 – Inter-Environnement Wallonie et Bond Beter Leefmilieu Vlaanderen.

¹⁴Swiss Federal Nuclear Safety Inspectorate (2012a); see in addition Swiss Federal Nuclear Safety Inspectorate (2012b). See also ENSREG (2012).

¹⁵ENSI has written the country report for Switzerland and, by the end of 2017, submitted it to the European Nuclear Safety Regulators Group ENSREG. Besides, ENSI has identified some areas for optimisation, see Swiss Federal Nuclear Safety Inspectorate (ENSI) (2018); Swiss Federal Nuclear Safety Inspectorate (ENSI) (2017).

In reaction to the meltdown incident in Fukushima, Germany put most of its nuclear power plants preliminarily off-line and then regulated the legally binding exit from nuclear technology.¹⁶ In Switzerland, the Federal Council first took a basic decision in favour of a phase-out of nuclear energy on 25 May 2011. According to this, the existing nuclear power plants should go off-line at the end of their safety-related operational lifespan and shall not be replaced by new nuclear power plants. A necessity for an early exit from nuclear energy has not been identified.¹⁷ With the slow phase-out, there is more time at hand for implementing the new energy policy and the conversion of the existing energy system.¹⁸ In a second phase, the applicable laws have been changed: According to Art. 12a KEG¹⁹ since 1 January 2018, the granting of general licenses for the construction of new, and according to Art. 106 para. 1^{bis} KEG for the modification of existing, nuclear power plants has been prohibited. Although it is up to Parliament to change these rules for the future, the relevant law would be subject to a people's referendum. The decommissioning of a nuclear power plant is regulated in Art. 26 KEG und Art. 45 KEV. The proprietor has to decommission a plant if it has been definitely taken out of operation or the operating license has not been issued, has been withdrawn or has expired according to Art. 68 para. 1 lit. a or b KEG and the responsible authority (DETEC: Federal Department of the Environment, Transport, Energy and Communications) has ordered the installation to be decommissioned (Art. 26 para. 1 KEG). Pursuant to Art. 27 KEG the proprietor of the plant has to submit a project for the decommissioning of the plant to the authorities. The supervisory authority will set a deadline for this. Then the competent department (DETEC) will decide on the measures for the decommissioning (Art. 28 KEG). After the decommissioning activities have been completed, the department will decide whether the plant is no longer a source of radiological dangers and therefore will not be subject to the legislation on nuclear energy anymore (Art. 29 KEG). The first of the five Swiss nuclear power plants, the Mühleberg Nuclear Power Plant, has been shut down at the end of 2019.²⁰ Other dates for a shutdown of power plants have not yet been set resp. have been postponed.²¹ Because of the step-by-step approach the situation of energy supply in Switzerland is, at the moment, less volatile than in Germany. However, in the mid term one has to deal with the loss of nuclear energy in Switzerland as an energy resource contributing to a stable basic supply.

¹⁶ 13. *Gesetz zur Änderung des Atomgesetzes*, German BGBl. 2001 I p. 1704 ff.

¹⁷ Federal Council (2013), p. 7592.

¹⁸ Federal Council (2013), p. 7608.

¹⁹ Nuclear Energy Act (*Kernenergiegesetz KEG*) of 21 March 2003 (SR 732.1).

²⁰ See Federal Department for the Environment, Transport, Energy and Communications (2018).

²¹ See Banholzer et al. (2019).

2.2 Fossil Energy Resources

In the European Green Deal, the European Commission calls for a fast exit from coal.²² During the past seven years, the Commission has succeeded in building a strong consensus among Member States in favour of an exit from the coal industry.²³ Poland with its huge resources of coal is the only Member State still abstaining. However, under EU competences this single vote is enough to stop any direct regulation concerning the choice of energy resources in the Member States. The political reasoning by Poland is understandable when compared to the development in Germany. There, after long political discussions, a compromise on the exit from coal has finally been reached. However, the remaining operation period until 2038 is rather long and the financial payments are rather generous.²⁴ In the end, it becomes obvious that all states are hesitant to abstain from using their own energy resources. The strategy behind the Green Deal becomes clear when taking into account the financial mechanism.²⁵ The acceptance of Poland could be reached by offering payments in other areas. However, the enormous amount of financial resources necessary to cope with the COVID-19 pandemic makes it rather doubtful that the financial mechanism will be realised as envisioned.

In Switzerland, there are no coal-fired power plants and the small share of coal in the Swiss energy mix is due to electricity imports.²⁶ However, Swiss private enterprises are still investing in the coal industry abroad, primarily in Germany.²⁷ But a further decline is expected in Switzerland due to the high burden of CO₂ levies.²⁸

In the EU, the pressure on coal has been increased indirectly by issuing stricter emission limits for coal power plants. Based on the Directive on Industrial Emissions (or IED), the Commission Implementing Decision 2017/1442²⁹ adopts the instrument of BAT (best available techniques) conclusions.³⁰ The BAT conclusions strengthen the limits set up by the IE Directive and call for stricter limits in case of new plants.

²²European Commission (2019), no. 2.1.2., 7.

²³Heselhaus and Becker (2019), p. 249, 256 et seq.

²⁴In June 2020, the deliberations took place in the German Parliament (*Deutscher Bundestag*); also see Franzius (2018), p. 1585 et seq.

²⁵For details, see Heselhaus (2020).

²⁶Schweizerische Energie-Stiftung, *Kohlekraft in der Schweiz*, available at <https://www.energiestiftung.ch>. Coal accounted for 0.5% of gross energy consumption in 2017 and 2018, see Swiss Federal Office of Energy (2019c), p. 2.

²⁷See the website of the Swiss Federal Office of Energy regarding fossil fuels and coal, available at <https://www.bfe.admin.ch>.

²⁸The CO₂ levy on coal of CHF 60 per tonne of CO₂ equals CHF 150 per tonne of coal; see the website of the Swiss Federal Office of Energy regarding fossil fuels and coal, available at <https://www.bfe.admin.ch>.

²⁹OJ. EU 2017, L 212, p. 1.

³⁰For details, see Vollmer (2017), p. 822.

In addition, the technique of unconventional fracking is under debate in the EU and likewise in Switzerland.³¹ The method applied for extracting gas or petroleum comprises a cocktail of water and hazardous substances pressed with high pressure into the earth in order to pump fossil energy resources to the surface. In the EU, there was a strong political debate whether fracking should be allowed at all or at least be strictly regulated. The European Parliament had at least asked for a duty for an environmental impact assessment.³² In 2014, the European Commission opted in favour of a compromise and issued only a recommendation that left the decision on allowing fracking to the Member States.³³ Especially, it is only recommended to carry out a strategic environmental assessment or an environmental impact assessment (EIA).

Concerning the duty to carry out an EIA with regard to fracking operations, there is no explicit rule on such operations in the EIA Directive.³⁴ Therefore, the judiciary has been asked whether indirectly an EIA may be a precondition for drilling operations. In 2015, the ECJ decided that in case of a test drilling with a test extraction an EIA has to be carried out. While annex I no. 14 EIA Directive was not applicable in the case at hand for not reaching the threshold for daily extractions, the ECJ applied annex II no. 2 lit. d EIA Directive concerning deep drilling.³⁵ Furthermore, cumulative impacts of other operations in the vicinity, not necessarily of the same kind, have to be taken into account in the assessment.³⁶ Otherwise a danger would exist that relevant impacts on the environment would not be considered adequately.

Subsequently, several EU Member States have enacted fracking laws. In 2017, in Germany specific provisions have been added to the Federal Water Act (*Wasserhaushaltsgesetz*). They provide for broad prohibitions of fracking and limitations concerning the use of fracking techniques.³⁷ Especially unconventional fracking operations for commercial reasons are not allowed. However, the economic interests in fracking have diminished sharply because this complicated technique is not cost-efficient in comparison to the low prices for mineral oil.

In Switzerland, the competence for regulating fracking lies primarily with the cantons.³⁸ But not all of them have enacted specific legislation with regard to the utilization of the subsurface. Some cantons have opted for a prohibition or a moratorium on fracking in general or on fracking for extraction of unconventional

³¹ See for the perils Gassner and Buchholz (2013), p. 143 et seq.

³² European Parliament (2013).

³³ Recommendation 2014/70/EU, OJ. EU 2014, L 39, p. 72.

³⁴ Directive 2011/92/EU, OJ. L 26, p. 1.

³⁵ ECJ, C-531/13, ECLI:EU:C:2015:79—Marktgemeinde Straßwalchen.

³⁶ ECJ, C-531/13, n. 39, 43.

³⁷ *Gesetz zur Änderung wasser- und naturschutzrechtlicher Vorschriften zur Untersagung und zur Risikominimierung bei den Verfahren der Fracking-Technologie*, German BGBl. 2016 I 1972.

³⁸ Schweizerische Energie-Stiftung, *Fossile Energien, Fracking: Förderung unkonventioneller fossiler Rohstoffe*, available at <https://www.energiestiftung.ch>.

gas.³⁹ On the federal level, basic principles can be regulated.⁴⁰ So, the Swiss Federation could enact a general moratorium on fracking on the basis of Art. 74 and 76 FC.⁴¹ Notwithstanding the legal possibility, fracking in Switzerland is not profitable from an economic point of view for the time being.

2.3 Renewable Energies

Concerning the promotion of renewable energies in the EU, two areas of action have to be differentiated: on the one hand, defining national targets (for the promotion of renewable energy in the Member States) and, on the other hand, controlling national measures under EU competition and economic law (for the latter, see Sect. 4). With regard to the development goals for renewable energies, the Renewable Energy Directive 2009/28/EC of 2009 (RE Directive 2020) has set up a goal for 2020 of a 20% share of renewable energies in the gross final energy consumption in the EU.⁴² Since the potential in the Member States for promoting renewable energies varies considerably, the RE Directive 2020 provides for specific goals for each Member State.⁴³ In 2016, the European Commission stated in a report that Member States are likely to reach these goals by 2020.⁴⁴ As a promoting measure, the Commission recommended to streamline procedures for licensing. It took several years of intense political debate to modify the RE Directive 2020 in 2019. In the new RE Directive 2030 (Directive (EU) 2018/2001⁴⁵), an overall goal of 32% of renewable energies in 2030 has been established.⁴⁶ Furthermore, the electricity from renewable energies shall be cost-efficient, market-based and facilitated by financial instruments.⁴⁷ In addition, administrative procedures should be streamlined, including so-called one-stop shops,⁴⁸ and the system of proof of origin has been optimized.⁴⁹

In Switzerland, Art. 2 EnG does not provide percentages for the promotion of renewable energies, but points of reference (“*Richtwerte*”). According to them, an expansion of the average domestic production of electricity from hydropower to at least 37,400 GWh in 2035 is envisaged. Concerning other renewable energies, the

³⁹Federal Council (2017), p. 3.

⁴⁰Federal Council (2017), p. 6 et seq.

⁴¹Federal Council (2017), p. 3.

⁴²Directive 2009/28/EC, OJ. EU 2009, L 140, p. 16.

⁴³Annex I Directive 2009/28/EC.

⁴⁴European Commission (2015).

⁴⁵OJ. EU 2018, L 328, p. 82.

⁴⁶Art. 3 para. 1 (new) Directive (EU) 2018/2001.

⁴⁷Art. 4 para. 3 (new) Directive (EU) 2018/2001.

⁴⁸Art. 15 (new) Directive (EU) 2018/2001.

⁴⁹Art. 19 (new) Directive (EU) 2018/2001.

promotion target is set for 4400 GWh in 2020 and for 11,400 GWh in 2035. Targets referring to reductions of energy consumption are established in Art. 3 EnG.

In 2018, the share of renewable energies in Swiss energy consumption amounted to approximately 23%.⁵⁰ The share of renewable energies in final energy consumption for heat generation amounted to 22%. With respect to electricity consumption, 56% originated from renewable energies. With regard to national energy production, a share of 58.7% relied on renewable energies in 2018 with the major part being contributed by hydropower. The share of solar power, biomass, biogas, wind, and waste usage amounted to only 6.1% of energy production.⁵¹ Not included in these figures are electricity imports. Differentiating according to energy resources, especially solar power has gained weight.

Still, hydropower is the major contributor to the Swiss electricity supply and according to the Energy Strategy 2050, it shall be further expanded. In 2035, according to the reference value in the Energy Act hydropower should at least produce on average 37,400 GWh.⁵² There is no reference value set for 2020. In order to reach these targets, an average annual increase of 83 GWh will be necessary. It is true that the reference value will be in reach based on the practice so far, but that would mean to realize the whole potential of hydropower envisaged for 2050 in Switzerland already by 2035.⁵³

In 2020, the Federal Council announced even more ambitious targets. On 3 April 2020, it decided to modify the energy law. The public consultation was open until 12 July 2020. Some of the main modifications will include the following measures: The already existing reference values (“*Richtwerte*”) for expanding hydropower and other renewable energies for 2035 will be declared legally binding targets.⁵⁴ Likewise investment contributions in solar power, biomass, and hydropower, today limited until 2030, will be prolonged until the end of 2035. Further, another target for 2050 shall be included in the energy law.⁵⁵

⁵⁰ See Swiss Federal Office of Energy (2019a), p. 5 et seq.

⁵¹ Swiss Federal Office of Energy (2019b), p. 16.

⁵² Art. 2 para. 2 EnG.

⁵³ Swiss Federal Office of Energy (2019b), p. 17.

⁵⁴ Federal Council (2020).

⁵⁵ The draft provision reads as follows (in German):

E-EnG Art. 2 Ziele für den Ausbau der Elektrizität aus erneuerbaren Energien

1. Die Produktion von Elektrizität aus erneuerbaren Energien, ausgenommen aus Wasserkraft, hat im Jahr 2035 mindestens 11 400 GWh und im Jahr 2050 mindestens 24 200 GWh zu betragen.
2. Die Produktion von Elektrizität aus Wasserkraft hat im Jahr 2035 mindestens 37 400 GWh und im Jahr 2050 mindestens 38 600 GWh zu betragen. Bei Pumpspeicherkraftwerken ist nur die Produktion aufgrund von natürlichen Zuflüssen in diesen Werten enthalten.
3. Der Bundesrat kann gesamthaft oder für einzelne Technologien weitere Zwischenziele festlegen.

The overall situation for a decarbonized energy production in the EU and in Switzerland is precarious. However, there are major differences with regard to specific renewable energies like wind power, which has been strongly developed in Germany but only plays a minor role in Switzerland. In many countries, nuclear power is still relevant for the basic and consistent supply of energy. This also holds true for Switzerland in the phase exiting out of this technology.

Attempts to make use of deep geothermal energy for producing electricity in Switzerland have so far all been unsuccessful. Therefore, for both parties to a possible bilateral electricity agreement there is a great interest in a stronger cooperation in the energy and electricity sector because that would allow to more easily balance the specific characteristics of individual energy resources in the overall energy mix. In this scenario, the already existing function of Switzerland as an electricity hub of Europe could be further strengthened. Instead, if the cooperation diminished by not concluding the agreement, there would be a strong likelihood that the debate on the use of nuclear power for a stable basic energy supply would resurface in Switzerland. Otherwise, Switzerland would have to accept a stronger dependency on its neighbouring countries.⁵⁶

3 Security of Supply

The challenges faced by the specific energy resources raise the question of how to secure energy supply with a new energy mix. For the time being, in Switzerland the supply is estimated as sufficient.⁵⁷ In this regard, many see a specific interest of the EU in improving the technical side of security of supply by a strengthened cooperation with Switzerland.⁵⁸ This argument usually highlights the blackout in Italy of 2003 as well as the disruptions in parts of the Western European network system in 2006.

More recently, a new peril for security of supply has emerged in the Eastern part of the EU, in the gas sector. The political tensions between Russia and the Ukraine, which is granted special conditions as a gas transit country, form the background to this instable situation.⁵⁹ Reductions in the volume of transported gas were used as an instrument of political power in this dispute, leading to perils for the secure supply of energy for the neighbouring EU Member States. This has been a driving factor behind the German-Russian cooperation on establishing a second gas pipeline in the Baltic Sea—the much disputed Nord Stream 2 project.

⁵⁶For the latter alternative, see Hettich et al. (2015), p. 44 et seq.

⁵⁷Breitenmoser and Weyenath (2014), n. 659; see Hettich et al. (2015), p. 44 et seq.

⁵⁸Hettich et al. (2015), p. 6.

⁵⁹For details, see Heselhaus and Knaut (2015), p. 253, 260.

In 2019, the EU has responded to this challenge by enacting Regulation (EU) 2019/941 on risk-preparedness in the electricity sector.⁶⁰ This regulation has the objective to better protect the EU citizens from shortages of energy supply or electricity blackouts. To this end, Member States have to set up national plans to assess possible shortages,⁶¹ which must comprise measures for providing for a regional crisis management. Therefore, regional crisis coordinators have to be designated for assisting regional network operators.⁶² In addition, the governance framework of the regulation includes the Electricity Coordination Group (ECG).⁶³ In case of a crisis, the European Commission and the other Member States have to be informed immediately.⁶⁴ The costs for assistance in case of a crisis have to be borne by the Member State concerned.

From a Swiss point of view, this strengthening of the cooperation between EU Member States has a positive effect, as it secures a stable supply in the neighbouring states as well. However, by this measure of self-help the significance of Switzerland for the security of supply in EU Member States will diminish. Therefore, Switzerland will lose an ace in the negotiation poker with the EU concerning the electricity agreement, which it could have played earlier, if the negotiations had not been delayed.

4 Competition

Assuring adequate competition is an important objective of the EU single market. In the overall view, Switzerland is way behind in opening up the energy market, since the second step in liberalising the electricity market for the private consumer has not been accomplished so far.⁶⁵ In consequence, competitors from the EU are excluded from that part of the Swiss market. At the same time, Swiss enterprises can realize additional gains in these areas. Although there are some limitations to transfer the surplus to other parts of the electricity market,⁶⁶ it might be used as a reserve to be invested in renewable energies. From this point of view, it is of high interest to assess the leeway for EU Member States under EU law in promoting renewable energies. The same leeway could be demanded by Switzerland in a bilateral electricity agreement.

⁶⁰OJ. EU L 158, p. 1. For details, see Heselhaus and Becker (2019), p. 249, 254.

⁶¹Art. 7 Regulation (EU) 2019/941.

⁶²Art. 12 Regulation (EU) 2019/941.

⁶³Art. 3 para. 2 Regulation (EU) 2019/941.

⁶⁴Art. 14 Regulation (EU) 2019/941.

⁶⁵Schleiniger et al. (2019), p. 20.

⁶⁶BGE 142 II 451, E. 5.2.4. and E. 5.2.8.

4.1 *Promoting the Decommissioning or Construction of Nuclear Power Plants*

In Germany, considerable payments have been made to compensate utility companies for the decision to phase out nuclear energy. From the viewpoint of the EU, this situation has highlighted the problematic issue of decommissioning nuclear power plants, which has long been foreseen. Deconstruction not only has a technical side, but it has a competition law side as well. The existing funds for deconstruction in the Member States are often not sufficient for bearing all of the costs. Therefore, in Germany additional payments from the government have been provided, which privilege this industry sector in comparison to other energy sectors.⁶⁷ In this regard, the European Commission only issued a communication, in which a framework for measures by the Member States is set up, leaving them a broad margin for appreciation.⁶⁸

In Switzerland the decommissioning of nuclear power plants is regulated by Art. 26–29 KEG.⁶⁹ In a specific chapter, the rules for securing the financial resources for the decommissioning are laid down. (Art. 77–82 KEG). The notion of decommissioning (“*Stilllegung*”) is rather broad in Swiss law and comprises all measures after the operation of a plant from the stop of operations to the complete deconstruction of the facility.⁷⁰ The costs of decommissioning have to be borne by the proprietor.⁷¹ A decommissioning fund (“*Stilllegungsfonds*”) has been established, which secures the financing of the decommissioning, of the dismantling of obsolete nuclear installations and of the disposal of the resulting waste material (“*Stilllegungskosten*”).⁷² The costs of the decommissioning are governed by the ordinance on the decommissioning and disposal funds (“*Stilllegungs- und Entsorgungsfondsverordnung*”, SEFV [Decommissioning and Waste Disposal Funds Ordinance]).⁷³ According to Art. 2 SEFV, the cost of the decommissioning comprises all costs which occur during the decommissioning of a power plant, especially the costs for the technical preparation of the facility, for the maintenance, for the decontamination and deconstruction of the site and the shredding of active and contaminated pieces thereof, for the transport and the disposal of the radioactive waste. These costs have to be differentiated from the disposal costs

⁶⁷ Heselhaus (2014), p. 201, 208 et seq.

⁶⁸ European Commission (2013).

⁶⁹ Nuclear Energy Act (*Kernenergiegesetz KEG*) of 21 March 2003, SR. 732.1.

⁷⁰ Hoppenbrock (2009), p. 157.

⁷¹ Hoppenbrock (2009), p. 160.

⁷² Art. 77 KEG.

⁷³ Ordinance of 7 December 2007 on the Decommissioning Fund and the Disposal Fund for Nuclear Installations (*Verordnung über den Stilllegungsfonds und den Entsorgungsfonds für Kernanlagen* [SEFV]), SR. 732.17.

(“*Entsorgungskosten*”), which include all costs for the disposal of the radioactive operation waste and of the spent nuclear fuel after the final shutdown.⁷⁴

The fund has legal personality and is supervised by federal authorities.⁷⁵ The main task of the fund is to guarantee the necessary financial resources.⁷⁶ According to Art. 77 para. 3 KEG, the proprietors of nuclear installations are obliged to pay contributions. The liability starts with the start of the operation and ends with the completion of the decommissioning.⁷⁷ The amount of the contributions is defined in Art. 4 and 8a SEFV. Furthermore, every 5 years, the proprietors have to undertake a study in order to review the predicted costs of decommissioning and disposal of waste.⁷⁸ Pursuant to Art. 8a SEFV, contributions have to be set at an amount which is sufficient to bear all of the said costs. According to information by BKW, the firm has already contributed around 40 million CHF to the costs by 2017 before the final decommissioning of the nuclear power plant in Mühleberg.⁷⁹ Therefore, financing should be secured.⁸⁰ In comparison to the EU, there are no relevant distortions of competition.

In the EU, there are some Member States eager to promote nuclear energy and to establish new facilities, like the United Kingdom and Hungary. In both countries, over the last years, considerable amounts of aid were granted by the state, which had to be checked by the European courts. The upgrading of the British nuclear power plant at Hinkley Point has been subject to some claims, which all were lost before the European courts. The European General Court (GC) accepted the state aid by the United Kingdom as permissible under EU state aid law, thus backing the former decision by the European Commission.⁸¹ In second instance, the ECJ upheld the decision of the General Court.⁸²

In Hungary, the construction of a new nuclear power plant has given rise to several legal issues under EU public procurement law. First, the European Commission allowed Hungary to rely on an exemption clause concerning the direct award of the contract to a Russian enterprise. Second, the Commission classified the financial contribution by Hungary as a permissible state aid.⁸³

⁷⁴ Art. 3 SEFV.

⁷⁵ Art. 81 para. 1 KEG.

⁷⁶ Hoppenbrock (2009), p. 163.

⁷⁷ Art. 7 para. 1 and 2 SEFV.

⁷⁸ Art. 4 para. 1 SEFV.

⁷⁹ BKW (2018), p. 14.

⁸⁰ BKW (2018), p. 14.

⁸¹ GC, T-382/15, ECLI:EU:T:2016:589.

⁸² ECJ, C-640/16 P, ECLI:EU:C:2017:752.

⁸³ European Commission (2017).

4.2 Promoting Renewable Energies

When considering the EU rules for promoting renewable energies, one has to look not only at the regulations, which provide for certain mechanisms, but also at the jurisprudence, which controls national measures as well. The competence to promote renewable energies is laid down in Art. 194 para. 1 lit. c TFEU under the Lisbon Treaty of November 2009. Already at the beginning of 2009, and therefore still based on the (predecessor) competences for the environment, Directive 2009/28/EC⁸⁴ on the promotion of the use of energy from renewable sources was enacted. It lays down the legal framework for the promotion of renewable energy until 2020 (RE Directive [2020]). These provisions have been complemented by Directive (EU) 2018/2001⁸⁵ (RE Directive [2030]).

According to the RE Directives, Member States can enact their own measures for the promotion of renewable energies in order to reach their development targets.⁸⁶ Furthermore, Member States might cooperate with other Member States or third states through “cooperation mechanisms”.⁸⁷ This includes the “statistical transfer”, by which renewable energies in one country could be used for the achievement of development targets in another, if a compensatory payment has been disbursed.⁸⁸ However, in practice this mechanism is hardly used, although renewable energies would be promoted in a cost-efficient manner.

The RE Directive (2030) regulates the promotion of renewable energies in the EU from 2021 until 2030. In addition to adopted contents of RE Directive (2020), it aims at securing competition in promoting renewable energies and to avoid market distortions.⁸⁹ To this end, the promotion should be set up in an open, transparent, non-discriminatory and cost-effective manner, which fosters competition.⁹⁰ In the literature, doubts have been raised whether the directive will reach these objectives.

Like the European Commission, the European Courts have qualified the national promotion measures as state aids, which have to comply with the rules of EU competition laws. Furthermore, of all the national promotion measures only the German mechanism has not been qualified as an unjustified interference with the free movement of goods because in this mechanism, the financial means of the contribution always remained in the hands of private parties and never came under the control by the state.⁹¹ In 2019, the ECJ has confirmed this view with regard to the German so-called “*EEG-Umlage*” in German energy laws.⁹²

⁸⁴OJ. EU 2009, L 140, p. 16.

⁸⁵OJ. EU 2018, L 328, p. 82.

⁸⁶Art. 3 para. 3 lit. a RE Directive (2020); Art. 4 para. 1 RE Directive (2030).

⁸⁷Art. 3 para. 3 lit. b RE Directive (2020); Art. 8–13 RE Directive (2030).

⁸⁸Art. 6 RE Directive (2020); Art. 8 RE Directive (2030).

⁸⁹Art. 1 and 4 RE Directive (2030).

⁹⁰Art. 4 para. 4, Art. 6 RE Directive (2030).

⁹¹ECJ, C-379/98, ECLI:EU:C:2001:160—*PreussenElektra*.

⁹²ECJ, C-405/16 P, ECLI:EU:C:2019:268—*Germany/Commission*.

In a case of 2015 with reference to Switzerland, the ECJ decided that the RE Directive does not allow Member States to accept electricity from third countries as green electricity in the framework of the national promotion mechanisms.⁹³ Otherwise, the objectives of the directive, especially the decarbonisation of the energy supply, could be impaired.⁹⁴

From the view of competition law, it has to be stressed that the ECJ interprets the RE Directive to allow for a territorial/regional limitation of the promoting measures.⁹⁵ These measures do interfere with the free movement of goods pursuant to Art. 34 TFEU, but they could be legitimate, i.e. proportionate.⁹⁶ On the one hand, the ECJ points out that each of the Member States has taken on specific targets for the production of electricity from renewable energies. Therefore, the Member States should be competent to decide on the implementing measures. On the other hand, the ECJ identified big differences in the potential for renewable energies of each Member State, which would call for a national nature of the promoting measures.⁹⁷ In 2017, the ECJ confirmed these principles, although reserving a strict test of proportionality of the mechanisms in place in a certain case.⁹⁸ An important element of this test is that the financial advantages of the measure must be directly attributed to the producers.⁹⁹ The basic argument of the ECJ cannot be underestimated because normally the ECJ rejects any attempt to justify a direct discrimination, i.e. a less favourable treatment based on the origin of a good, in the framework of the free movement of goods.

5 Conclusion

In conclusion, it has to be noted that the EU and Switzerland face similar challenges in the quest for the future energy mix. Without a reintroduction of nuclear energy, the European energy market becomes even more important for Switzerland and a secure energy supply. On the one hand, since the EU has set up new measures to stabilize energy supply in the Member States, the function of Switzerland as an energy reserve has been diminished. On the other hand, the function of Switzerland as a European electricity interface has been strengthened because the increase in renewable energies calls for a flexible cross-border balancing of supply. To this end, a bilateral energy and electricity treaty between Switzerland and the EU would establish a reliable legal framework. The price to pay for Switzerland would be the

⁹³ ECJ, C-66/13, ECLI:EU:C:2014:2399—Green Network SpA.

⁹⁴ ECJ, C-66/13, n. 59 et seq.

⁹⁵ ECJ, C-573/12, ECLI:EU:C:2014:2037—Ålands Vindkraft.

⁹⁶ ECJ, C-573/12, n. 82.

⁹⁷ ECJ, C-573/12, n. 93 and 94.

⁹⁸ ECJ, C-492/14, ECLI:EU:C:2016:732—Essent Belgium NV.

⁹⁹ ECJ, C-492/14, n 112.

second step in the liberalisation of the energy market with regard to private consumers. With regard to the Energy Strategy 2050 and the envisaged energy transition, the analysis has established that the EU gives its Member States considerable leeway for regional/national promotion mechanisms. Therefore, the quest for security of energy supply and the objective of fighting climate change can be flexibly combined in a closer cooperation with the EU.

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