Investments in renewable energy production outside Switzerland by Swiss energy providers and institutional investors

Update 2019

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This is a short version (with updated data as per December 2019) of the original report from September 2016 which is downloadable at:
www.energiezukunftschweiz.ch -> über uns -> Dokumentation

Energie Zukunft Schweiz (EZS), 20.2.2020, V. 3

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Summary

Energie Zukunft Schweiz (EZS) has researched investments in European renewable energy production by major Swiss energy providers as well as important institutional investors.

Swiss energy providers and institutional investors invest heavily in renewable energy production, especially in Switzerland's neighboring countries. To date (December 2019), they have invested in non-Swiss production facilities with an annual production of about **11.5 Terawatt-hours** (TWh) electricity – **4.9 TWh more** than counted in our original report (September 2016). Between our original report and the first update (March 2018) an increase of 1.7 TWh has been observed. Since then, we count an additional increase of 3.2 TWh. This acceleration of investments in renewables is shown in Figure 1.

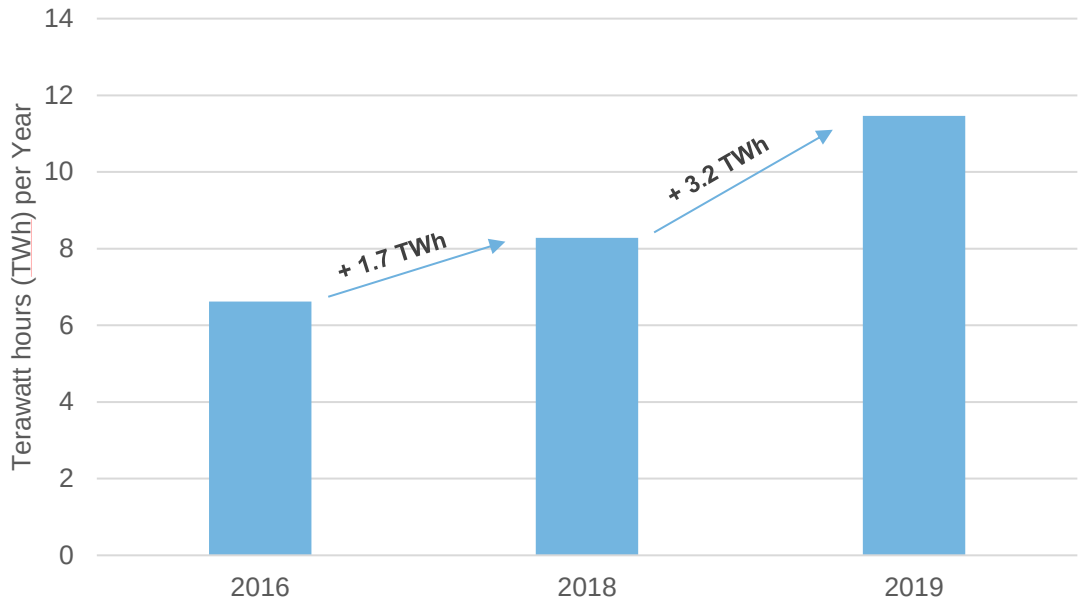

Figure 1: Growth trend in renewable electricity production through Swiss investments in Europe outside of Switzerland as reported in the investment reports from EZS.

Overview of investments

Figure 2 shows which Swiss investors have invested in renewable energy production facilities outside Switzerland and the amount of the yearly production in gigawatt hours (GWh) respectively. The total production sums up to around 11'500 GWh, or **11.5 TWh**, per annum, the total installed power capacity to about **5.2 Gigawatt (GW)**. For detailed data please go to the appendix.

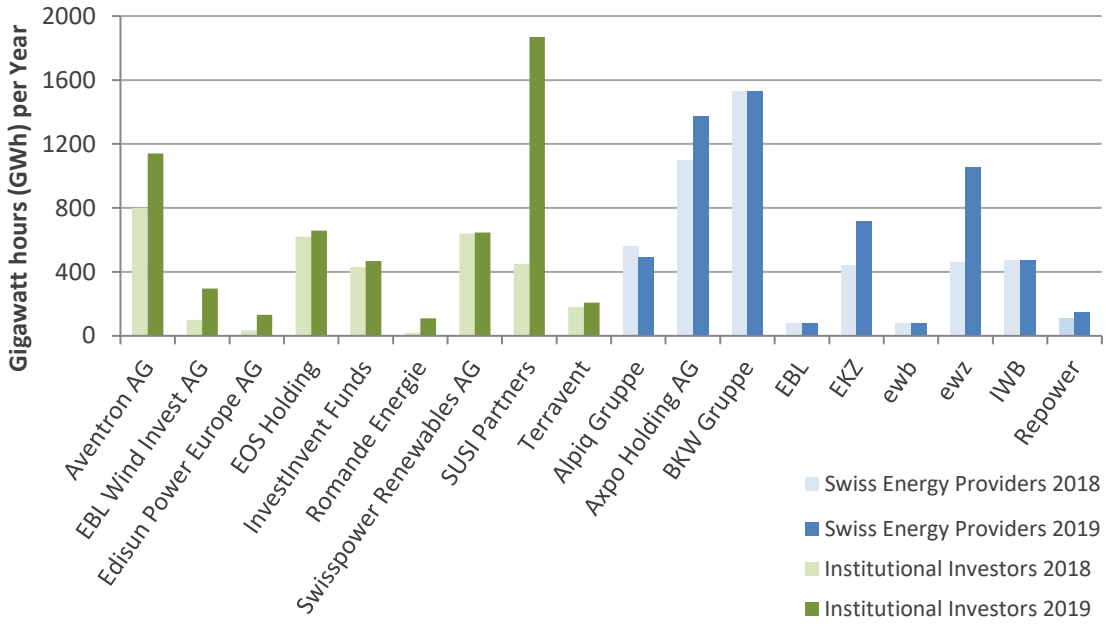

Figure 2: Annual electricity production of renewable energy facilities invested in by Swiss companies outside Switzerland (by share of investing companies). The electricity from these facilities is fed into the grid and offered on the power market with a green energy premium either via national compensation organizations (e.g. Stiftung KEV) or directly from the producer. Increasingly, direct marketing with a suitable premium is being established. The group "various" is not included in this figure.

Figure 3 shows that the by far largest share, close to 85%, of produced electricity is wind power. Solar is with 9% the second largest source and small hydropower a close third with 7%. Biomass accounts for about 1% of generated electricity. About two thirds of invested capacity is located in the neighboring countries France, Italy or Germany with very good access to the Swiss electricity grid. Current problems within the German grid will presumably have been solved by the time the majority of Swiss nuclear power plants has been shut down.

Apparent is furthermore a clear preference towards investments abroad compared to within Switzerland. This preference is visualized in Figure 4. Growth of new renewable production (operational or subsidies granted) within Switzerland between 2016 and 2019 has been limited to 9% while production owned (operational or under construction) by Swiss investors in the EU has grown in the same time period by 74%.

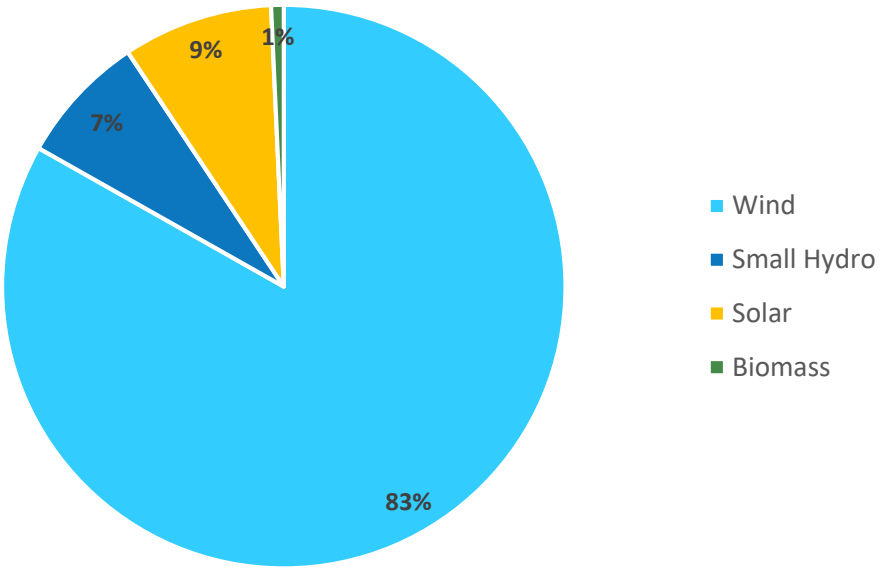

Figure 3: Distribution of generated electricity by source. The shares are calculated as percentage of the total yearly electricity production of all powerplants considered in this report. This includes operational powerplants and powerplants that are still under construction.

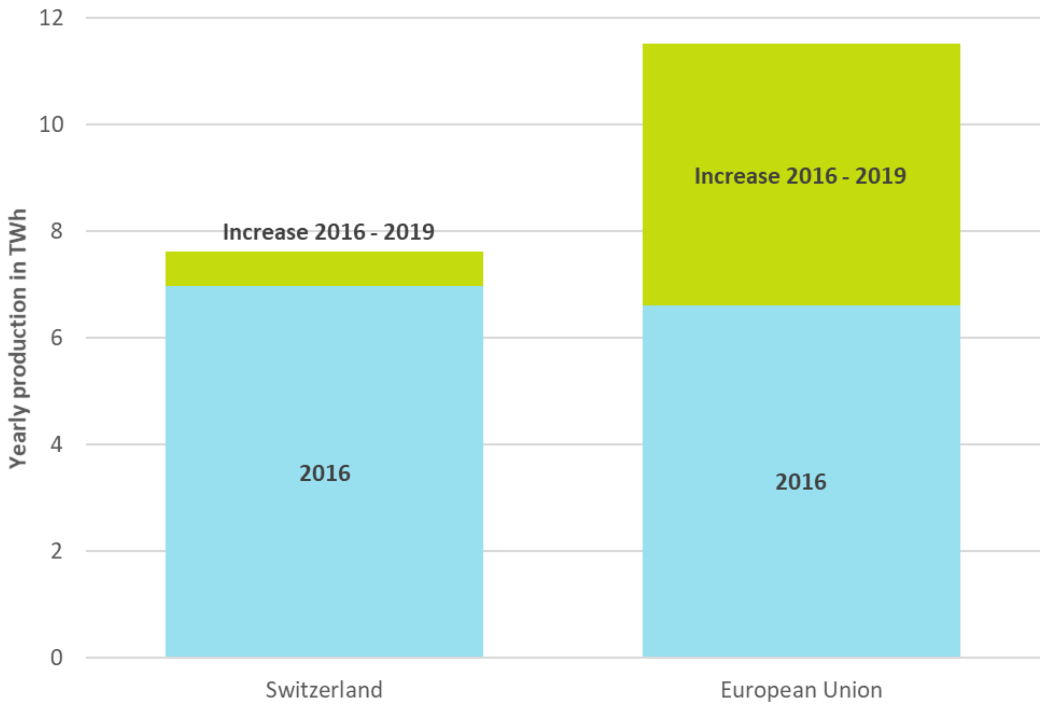

Figure 4: Investments by Swiss energy providers and institutional investors in renewable electricity production within Switzerland and in the European Union between 2016 and 2019. Included are operational power plants as well as ones still under construction or with subsidies pledged (CH). Together production in Switzerland and the EU amounts to 19 TWh. For comparison, nuclear powerplants generated 25 TWh of electricity in 2019. Sources: EZS, 2019; Pronovo, 2019; Swissnuclear, 2020

Appendix / Data

A) Details Concerning Investments in European Renewable Energy Facilities by Swiss Energy Providers

Disclaimer

The disclosures of this report are a snapshot of the most important Swiss investments in renewable energy known to us. This report is based on online published and publicly available information. Every included company with a portfolio of over 30 MW installed capacity has been given the opportunity to comment and, if necessary, correct the proposed capacity/production values. About half of these companies took advantage of this opportunity. The investment portfolios of the companies listed may since have changed as a result of purchases and sales of investments or shares. The listing does not claim to be complete. Double counts cannot be completely ruled out due to the occasionally complex participation structures. Smaller holdings of investors not included in research or not listed in the sources may be missing from the listing.

Swiss Energy Providers			
Company / Investor[1]	**Invested Facilities: Installed Capacity in Megawatts[2]** (MW)	**Invested Facilities: Annual Electricity Production in Gigawatt Hours[3]** (GWh)	**Technology and/or Country Allocation of the Facilities** (if possible, with the consulted source) F=France, D=Germany; I=Italy, NO=Norway, SE=Sweden, POR=Portugal, BG=Bulgaria, ESP=Spain, FIN=Finland, DK=Denm.
Alpiq Gruppe[i]	310	490[ii]	**Wind Power** BG 72.5 MW / 119.0 GWh F 10.5 MW / 22.6 GWh I 201.5 MW / 306.0 GWh **Photovoltaics** I 13.6 MW / 15.1 GWh **Small Hydro** F 2.6 MW / 12.3 GWh I 8.4 MW / 16.2 GWh
Axpo Holding AG[iii]	735	1370[iv]	**Wind Power** ESP, D, I, F 487.9 MW / 1073.3 GWh **Photovoltaics** various countries 187 MW / 224.4 GWh

[1] Investments of the mentioned utilities through the holdings Helvetic Wind, Terravent and Repartner are, if not stated different in the sources, attributed to the utilities. Investments through Aventron AG, EBL Wind Invest AG, EOS Holding, Swisspower Renewables AG are not attributed to utilities.

[2/3] By share of investing companies; calculated/researched values are rounded to 5 MW/10 GWh. Unless stated otherwise, installed capacity and average annual production are according to the plant descriptions and/or information provided by the investing companies.

Swiss Energy Providers

Company / Investor[1]	**Invested Facilities: Installed Capacity in Megawatts**[2] (MW)	**Invested Facilities: Annual Electricity Production in Gigawatt Hours**[3] (GWh)	**Technology and/or Country Allocation of the Facilities** (if possible, with the consulted source) F=France, D=Germany; I=Italy, NO=Norway, SE=Sweden, POR=Portugal, BG=Bulgaria, ESP=Spain, FIN=Finland, DK=Denm.
BKW Gruppe[v]	640 (527+112 under construction)	1530 (1147+381 under construction)	**Wind Power** D 149.0 MW / 272.3 GWh F 62.5 MW / 158.7 GWh I 239.6 MW / 425.8 GWh NO 54.0 MW / 190.0 GWh *under construction* *NO 112.0 MW / 380.8 GWh* **Small Hydro** I 18.0 MW / 70.0 GWh **Biomass** I 3.7 MW / 29.9 GWh
EBL[vi]	45	80	**Wind Power** D 19.3 MW / 39.3 GWh I 5.3 MW / 11.4 GWh **Solar Thermal** ESP 18.9 MW / 25.2 GWh
EKZ[vii]	315 (198+119 under construction)	720 (464+254 under construction)	**Wind Power** D 96.0 MW / 203.0 GWh F 61.9 MW / 157.0 GWh I 9.9 MW / 17.7 GWh POR 28.0 MW / 83.6 GWh *under construction* *POR 20.7 MW / 71.0 GWh* **Photovoltaics** *under construction* *ESP 49.1 MW / 92.0 GWh* *POR 48.9 MW / 90.5 GWh* **Solar Thermal** ESP 1.8 MW / 2.9 GWh
ewb[viii]	40	80	**Wind Power** D 24.7 MW / 47.0 GWh I 15.1 MW / 27.3 GWh

Swiss Energy Providers			
Company / Investor[1]	**Invested Facilities: Installed Capacity in Megawatts[2]** (MW)	**Invested Facilities: Annual Electricity Production in Gigawatt Hours[3]** (GWh)	**Technology and/or Country Allocation of the Facilities** (if possible, with the consulted source) F=France, D=Germany; I=Italy, NO=Norway, SE=Sweden, POR=Portugal, BG=Bulgaria, ESP=Spain, FIN=Finland, DK=Denm.
			Solar Thermal ESP 1.8 MW / 2.9 GWh
ewz[ix]	330 (178+150 under construction)	1060 (480+575 under construction)	**Wind Power** D 68.6 MW / 163.3 GWh F 60.0 MW / 173.0 GWh NO 14.7 MW / 47.0 GWh SE 31.2 MW / 92.7 GWh *under construction* *D 24.8 MW / 108.0 GWh* *NO 124.7 MW / 467.0 GWh* **Solar Thermal** ESP 3.0 MW / 4.5 GWh
IWB[x]	210	470	**Wind Power** D 67.8 MW / 145.0 GWh F 131.9 MW / 268 GWh **Photovoltaics** F 4.8 MW / 7.4 GWh **Biogas** D 4.7 MW / 49.0 GWh
Repower[xi]	80	147	**Wind Power** D 13.6 MW / 29.5 GWh I 57.6 MW / 104.5 GWh **Photovoltaics** I 8.0 MW / 10.8 GWh **Small Hydro** I 0.9 MW / 2.2 GWh
Romande Energie SA[xii]	35[xiii]	110	**Wind Power** F 15.1 MW / 33.2 GWh **Small Hydro** F 21.8 MW / 76.2 GWh

Swiss Energy Providers			
Company / Investor[1]	**Invested Facilities: Installed Capacity in Megawatts**[2] (MW)	**Invested Facilities: Annual Electricity Production in Gigawatt Hours**[3] (GWh)	**Technology and/or Country Allocation of the Facilities** (if possible, with the consulted source) F=France, D=Germany; I=Italy, NO=Norway, SE=Sweden, POR=Portugal, BG=Bulgaria, ESP=Spain, FIN=Finland, DK=Denm.
Various[xiv]	>10	>20	**Wind Power** in various countries

B) Details Concerning Investments in Renewable Energy Facilities Abroad by Affiliates and Institutional Investors

Affiliates and Institutional Investors			
Company / Investor	**Invested Facilities: Installed Capacity in Megawatts** (MW)	**Invested Facilities: Annual Electricity Production in Gigawatt Hours** (GWh)	**Technology and/or Country Allocation of the Facilities** (if possible, with the consulted source) F=France, D=Germany; I=Italy, NO=Norway, SE=Sweden, POR=Portugal, BG=Bulgaria, ESP=Spain, FIN=Finland, DK=Denmark, IR=Ireland
Aventron AG[xv]	505 (448+59 under construction)	1140[xvi] (1049+92 under construction)	**Wind Power** D 75.8 MW / 166.8 GWh ESP 112.0 MW / 246.4 GWh F 60.3 MW / 132.7 GWh I 18.0 MW / 39.6 GWh NO 6.4 MW / 14.1 GWh **Photovoltaics** ESP 7.1 MW / 8.5 GWh F 27.9 MW / 33.5 GWh I 36.3 MW / 43.6 GWh *under construction* *ESP 50 MW / 60.0 GWh* **Small Hydro** F 46.5 MW / 162.8 GWh I 1.7 MW / 6.0 GWh NO 55.9 MW / 195.7 GWh *under construction* *NO 9.1 MW / 31.9 GWh*
EBL Wind Invest AG[xvii]	110	300	**Wind Power** D 112.0 MW / 295.0 GWh
Edisun Power Europe AG[xviii]	105 (33+72 under construction)	130 (46+86[xix] under construction)	**Photovoltaics** D 5.7 MW / 5.7 GWh ESP 21.3 MW / 33.6 GWh F 4.8 MW / 5.7 GWh I 1.0 MW / 1.3 GWh *under construction* *POR 72.0 MW / 86.4 GWh*
EOS Holding[xx]	355	660	**Wind Power** D and F 300.0 MW / 571.1 GWh

Affiliates and Institutional Investors			
Company / Investor	**Invested Facilities: Installed Capacity in Megawatts** (MW)	**Invested Facilities: Annual Electricity Production in Gigawatt Hours** (GWh)	**Technology and/or Country Allocation of the Facilities** (if possible, with the consulted source) F=France, D=Germany; I=Italy, NO=Norway, SE=Sweden, POR=Portugal, BG=Bulgaria, ESP=Spain, FIN=Finland, DK=Denmark, IR=Ireland
			Photovoltaics POR and F 57.0 MW / 86.7 GWh
Swisspower Renewables AG[xxi]	310	650	**Wind Power** D 198.0 MW / 345.0 GWh I 38.0 MW / 60.0 GWh **Small Hydro** I 73.0 MW / 242.0 GWh
Terravent[xxii]	85	210	**Wind Power** D 55.6 MW / 136.6 GWh F 27.6 MW / 71.1 GWh
SUSI Partners[xxiii]	765 (463+304 under construction)	1870 (920+947 under construction)	**Wind Power** D, DK, F, FIN, IR, NO and SE 295.0 MW / 734.0 GWh *under construction* *304.0 MW / 947.0 GWh* **Photovoltaics** D, F, I, NL and UK 169.0 MW / 186.0 GWh
InvestInvent Funds[xxiv]	215 (205+8 under construction)	470[xxv] (452+17 under construction)	**Wind Power:** D 165.3 MW / 363.7 GWh F 40.1 MW / 88.3 GWh *under construction* *D 7.7 MW / 16.9 GWh*
Various[xxvi]	> 15	> 30	**Wind** in various countries

Sources

[i] Source: https://www.alpiq.com/de/energieerzeugung/neue-erneuerbare-energien/, as of November 10, 2019; Personal message, Guido Lichtensteiger, Communications & Public Affairs Alpiq, 4.12.2019

[ii] The reduction in annual production compared to February 2018 is due to corrections in the plants expected yearly production.

[iii] Sources: Axpo Halbjahresbericht 31. März 19, Axpo Nachhaltigkeitsbericht 2017/2018; https://www.ee-news.ch/de/article/41802/axpo-verkauft-vier-windparks-an-eb-erneuerbare-energien-fonds-europa?utm_source=newsletter998&utm_medium=email&utm_campaign=newsletter998, as of November 8, 2019; https://www.ee-news.ch/de/article/42205/volkswind-nimmt-16-mw-windpark-in-frankreich-in-betrieb?utm_source=newsletter1026&utm_medium=email&utm_campaign=newsletter1026, as of November 8, 2019; https://www.nzz.ch/wirtschaft/axpo-uebernimmt-photovoltaik-unternehmen-urbasolar-ld.1478840, as of November 12, 2019.

[iv] Average annual production is estimated by EZS (2'200 full load hours/Wind, 1'200 full load hours/PV)

[v] Source: https://www.bkw.ch/ueber-bkw/unsere-infrastruktur/unsere-kraftwerke, as of November 12, 2019.

[vi] Without shares of EBL Wind Invest AG; Source: Personal message, Yves Grebenarov, Leiter Produktion Strom EBL, 2.12.2019;

[vii] Source: Personal message, Christian Hürlimann, Leiter Asset Management Erneuerbare EKZ, 29.11.2019

[viii] Includes investments via Helvetic Wind. Sources: www.snee.ch/beteiligung; https://www.ewb.ch/ueber-uns/unternehmen/unsere-kraftwerke, as of November 10 2019; Confirmed in personal message, Sabine Krähenbühl, Kommunikationsspezialistin ewb, 17.12.2019

[ix] Sources: Personal message, Marie Oswald, media and public affairs EWZ, 4.12.2019; Geschäftsbericht 2018 EWZ Deutschland GmbH, as of November 8, 2019, https://www.ee-news.ch/de/article/40639/ewz-kauft-94-mw-windpark-in-norwegen?utm_source=newsletter921&utm_medium=email&utm_campaign=newsletter921, as of November 8, 2019.

[x] Source: Personal message, Erik Rummer, Leiter Kommunikation & Marketing IWB, 05.12.2019

[xi] Source: https://www.repower.com/gruppe/tabelle-anlagen/, as of November 12, 2019.

[xii] Source: https://investor.romande-energie.ch/~/media/Files/R/Romande-Energie-IR/Attachments/presentations/2018-results-presentation-to-analysts.pdf, as of December, 5, 2019; https://www.romande-energie.ch/espace-presse/communiques-de-presse/181203-communique-fr, as of November 27, 2019

[xiii] Capacity in MW: Estimate by EZS (2'200 full load hours/Wind, 3'500 full load hours/Hydro)

[xiv] Sum of smaller Swiss energy providers. Investments through Repartner; Sources: https://www.repower.com/gruppe/tabelle-anlagen/, as of November 12, 2019, https://www.repower.com/ch/energieversorger/betrieb/repartner-produktions-ag/, as of December 5, 2019

[xv] Sources: http://aventron.com/assetsportfolio/hydro, as of November 7, 2019; Aventron Halbjahresbericht Juni 2019, as of November 7, 2019; Confirmed in personal message, Antoine Millioud, CEO Aventron, 10.12.2019

[xvi] Average annual production is estimated by EZS (2'200 full load hours/Wind, 1'200 full load hours/PV, 3'500 full load hours/Hydro)

[xvii] Sources: Personal message, Yves Grebenarov, head of production electricity EBL, 2.12.2019; https://www.ebl.ch/de/unternehmen/eblinvest/assets.html, as of November 8, 2019

[xviii] Sources: Personal message, Rainer Isenrich, CEO Edisun Power Europe AG, 27.11.2019; https://www.edisunpower.com/de/home-de/anlagen-de, as of November 27, 2019; https://www.ee-news.ch/de/article/42640, as of December 17, 2019

[xix] Average annual production is estimated by EZS (1'200 full load hours/PV)

[xx] Source: EOS Holding, annual report 2018, as of November 10, 2019

[xxi] Source. Personal message, Lorenza Ferri, Projekt Managerin Swisspower, 5.12.2019

[xxii] Source: http://www.terravent.ch/de/beteiligungen.html, as of November 12, 2019. Without shares from Axpo and EKZ.

[xxiii] Source: Personal message, Dimitri Schubiger, SUSI Partners Media, 5.12.2019; https://www.ee-news.ch/de/article/42640/edisun-power-baubeginn-des-49-mw-solarstromkraftwerks-mogadouro?utm_source=newsletter1081&utm_medium=email&utm_campaign=newsletter1081, as of 13.12.2019

[xxiv] Source: http://www.investinventfund.com/wind-energy-fund/assets/fund-structure, as of November 8, 2019.

[xxv] The average annual production is estimated by EZS (2'200 full load hours/Wind)

[xxvi] SNEE shares of Helvetic Wind. Source: www.snee.ch/beteiligung; www.ewb.ch; as of November, 7 2019.