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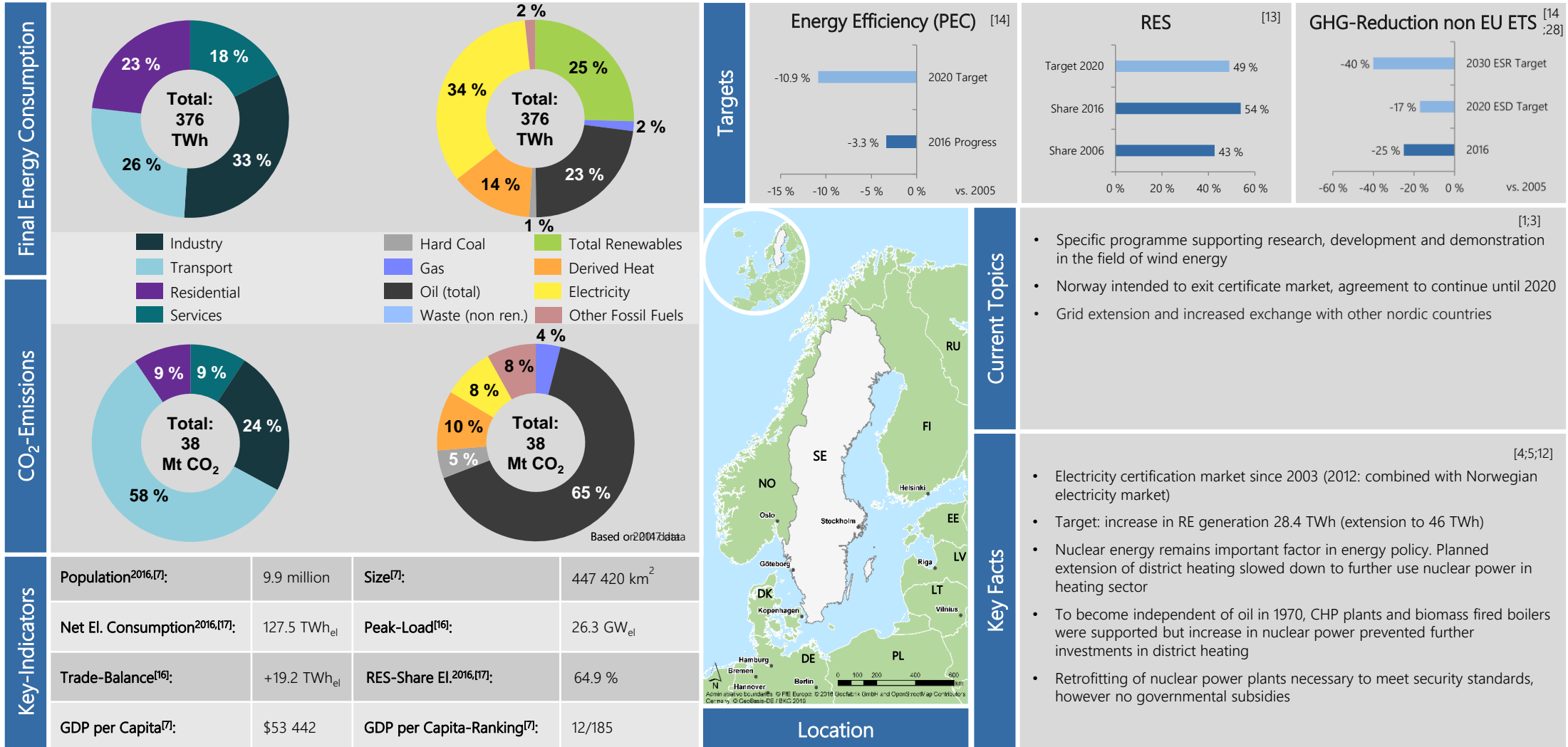


Energy Country Profile Sweden



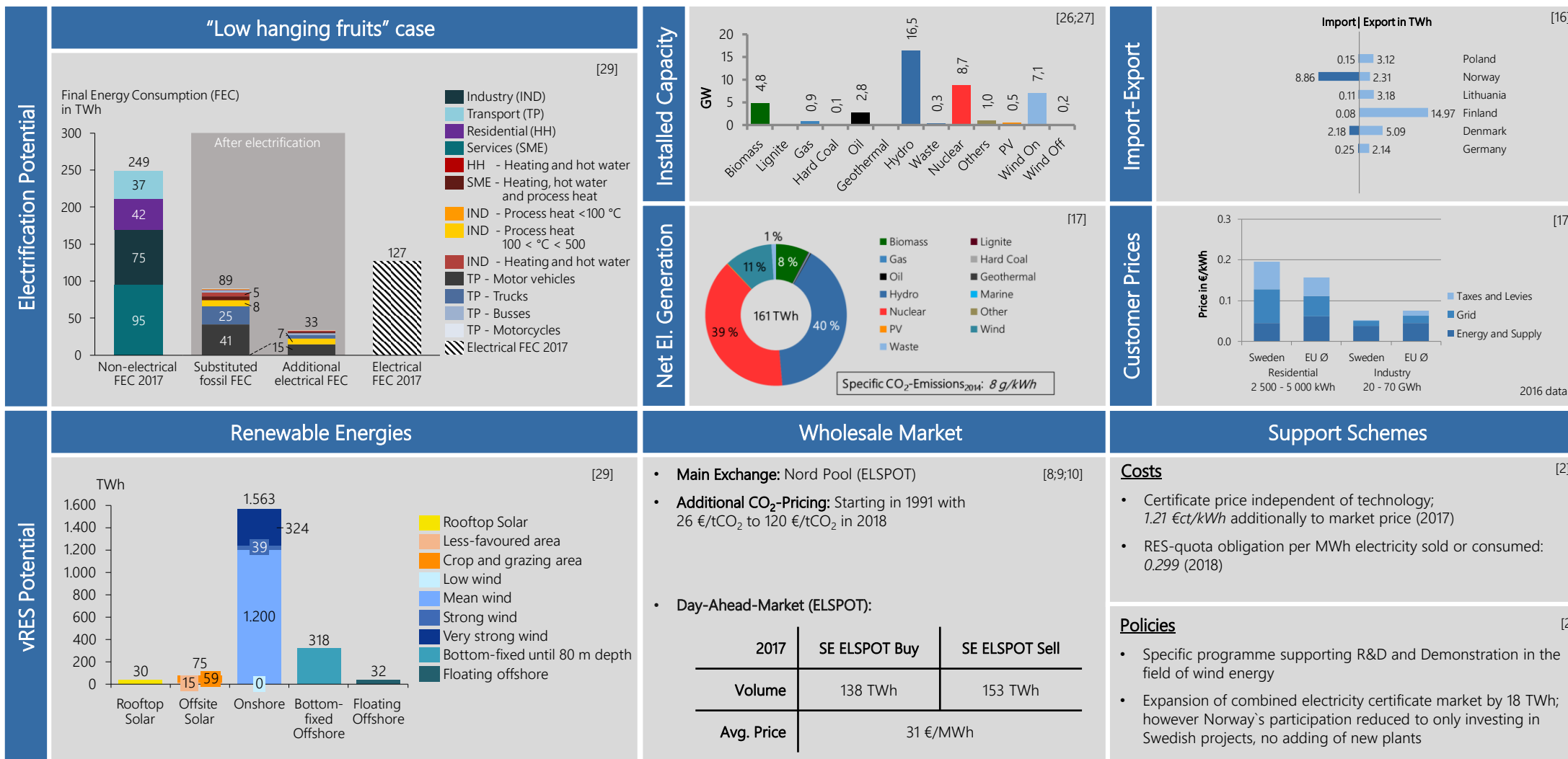
2020

Sweden at a Glance



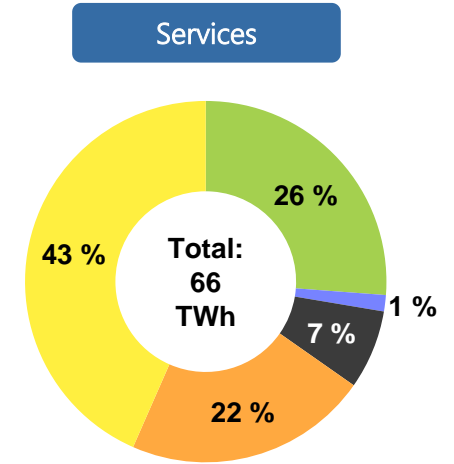
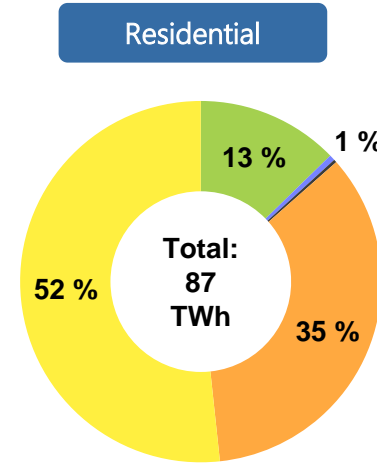
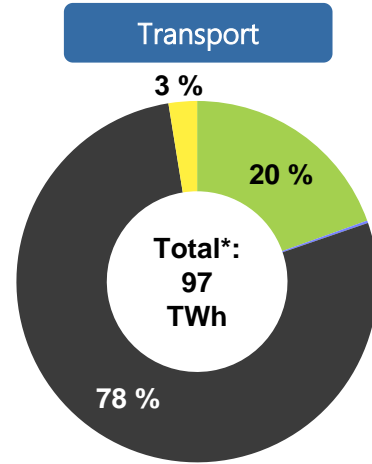
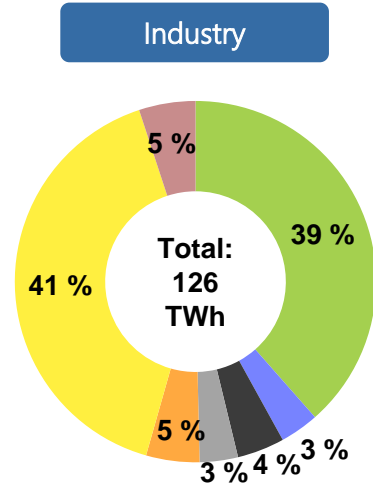
All evaluations based on the year 2017 if not mentioned otherwise.

Sweden's Electricity Sector

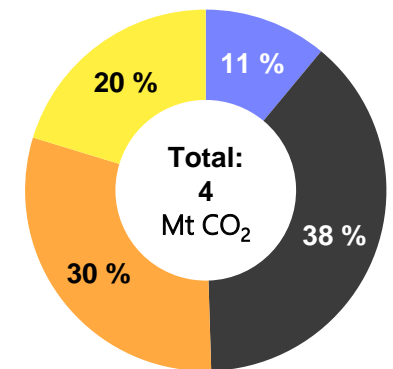
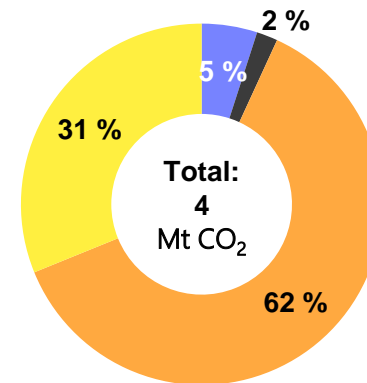
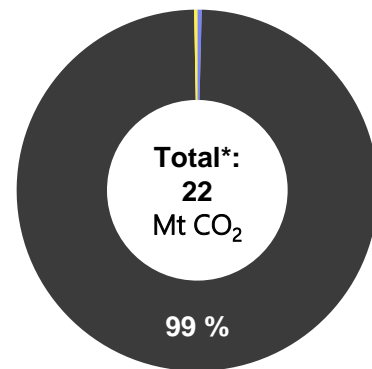
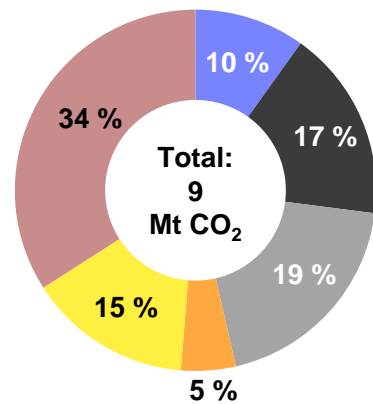


Sweden's Energy Consumption & Emissions by Sectors and Energy Carriers - 2017

Final Energy Consumption



CO₂ - Emissions

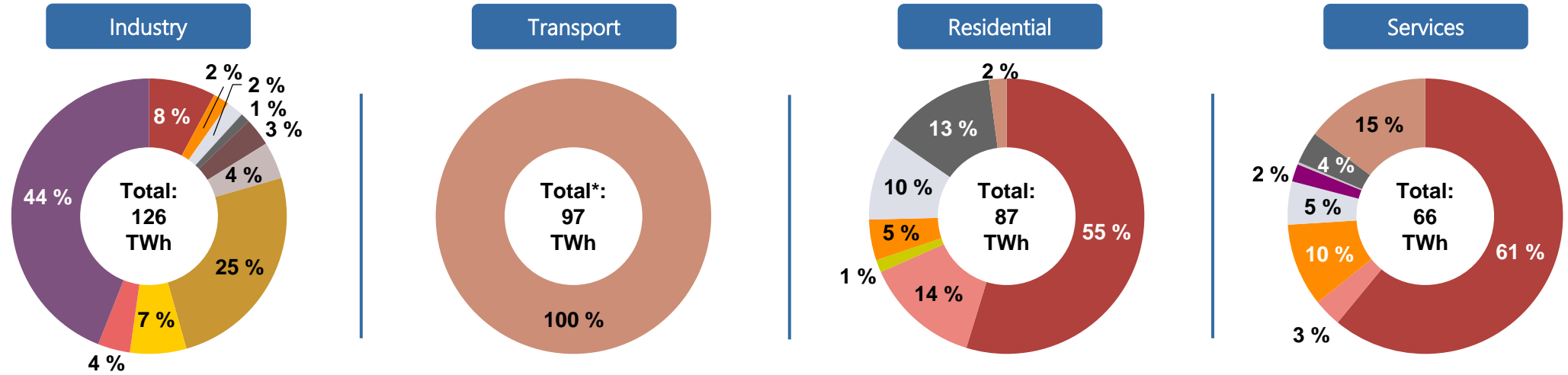


Hard Coal
 Oil (total)
 Gas
 Total Renewables
 Waste (non. ren.)
 Derived Heat
 Electricity
 Other Fossil Fuels

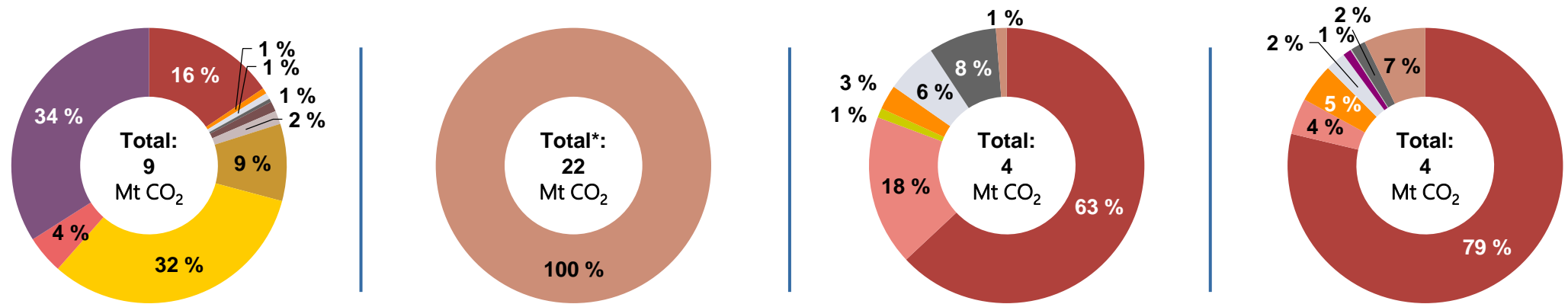
*excluding international aviation

Sweden's Energy Consumption & Emissions by Application & Sector - 2017

Final Energy Consumption



CO₂ - Emissions



- Space Heating
- Process Heat 100 - 500 °C
- Process Heating < 100 °C
- Other Process Cold
- ICT
- Process Heating
- Cooking
- Pumps
- Warm Water
- Process Heat > 500 °C
- Other Mechanical Energy
- Mechanical Energy
- Lighting
- Compressed Air
- Climate Cold

*excluding international aviation

Sweden: Sources



Institutions

Ministry of Environment and Energy	http://www.government.se/government-of-sweden/ministry-of-the-environment/
TSO	Svenska Kraftnaät https://www.svk.se/en/
Regulator	Energimarknadsinspektionen https://www.ei.se/en/

Sources

[1] IEA (International Energy Agency) 2017, Energy Policies of IEA countries, Sweden 2013, http://www.iea.org/publications/freepublications/publication/Sweden2013_free.pdf

[2] Res Legal, <http://www.res-legal.eu/en/search-by-country/sweden/summary/c/sweden/s/res-e/sum/200/1pid/199/>

[3] Joint Electricity Certificate System, <https://www.pv-magazine.com/2017/04/19/sweden-and-norway-extend-joint-electricity-certificate-system-for-renewables-to-2030/>

[4] Norwegian - Swedish Electricity Certificate Market, https://www.nve.no/Media/4750/elcertifikat-2015-en_web.pdf

[5] District Heating and Cooling in Sweden, https://ac.els-cdn.com/S0360544217304140/1-s2.0-S0360544217304140-main.pdf?_tid=6babd7be-lacb-11e8-8eb9-00000aacb362&acdnat=1519632342_a1b492b218332df9a4bacf3923675e2b

[6] Framework Agreement of Governmental Parties, <http://www.government.se/contentassets/8239ed8e9517442580aac9bcb00197cc/ek-ok-eng.pdf>

[7] World Development Indicators, The World Bank, <https://data.worldbank.org/>

[8] Sweden's Carbon Tax, <http://www.government.se/government-policy/taxes-and-tariffs/swedens-carbon-tax/>

[9] Nord Pool Spot – Market Data, <https://www.nordpoolgroup.com/Market-data1/Dayahead/Volumes/SE/Hourly1111/?view=table>

[10] Swedish Energy Markets Inspectorate, 2017, https://www.ei.se/PageFiles/310277/EI_R2017_06.pdf

[11] Extension of Green Certificate Scheme, <https://www.enerdata.net/publications/daily-energy-news/sweden-and-norway-extend-common-green-certificate-scheme-2030.html>

[12] Extension of Joint Electricity Certificate System, <https://www.pv-magazine.com/2017/04/19/sweden-and-norway-extend-joint-electricity-certificate-system-for-renewables-to-2030/>

[13] Eurostat, http://ec.europa.eu/eurostat/statistics-explained/images/b/b7/Table_2-Share_of_energy_from_renewable_sources_in_gross_final_consumption_of_energy_2004-2016.png

[14] European Environment Agency <https://www.eea.europa.eu/publications/trends-and-projections-in-europe-2018-climate-and-energy>

[16] ENTSO-E Transparency Platform, <https://transparency.entsoe.eu/>

[17] Eurostat Database, <http://ec.europa.eu/eurostat/de/data/database>

[18] National Flag, <http://www.nationalflaggen.de/flaggen-europa.html>

[19] European Commission - Eurostat, 2017, Energy statistics - supply, transformation and consumption: Complete energy balances - annual data - nrg_110a: http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=nrg_110a&lang=en

[20] European Commission - Eurostat, 2017, Energy consumption in households: http://ec.europa.eu/eurostat/statistics-explained/index.php/Energy_consumption_in_households

[21] AG Energiebilanzen e.V., 2018, Energiebilanz der Bundesrepublik Deutschland 2016

[22] TEP Energy GmbH (TEP), University Utrecht ARMINES, 2017, Deliverable 3.1: Profile of heating and cooling demand in 2015: <http://www.heatroadmap.eu/output.php> Karlsruhe: Fraunhofer Institute for Systems and Innovation Research (ISI)

[23] Fraunhofer Institute for Systems and Innovation Research (ISI), Fraunhofer Institute for Solar Energy Systems (ISE), Institute for Resource Efficiency and Energy Strategies GmbH (IREES), Observ'ERTU Wien - Energy Economics Group (EEG), TEP Energy GmbH (TEP), European Commission (EC), 2016, Mapping and analyses of the current and future (2020 - 2030) heating/cooling fuel deployment (fossil/renewables) - Work package 1: Final energy consumption for the year 2012

[24] Institute for Global Environmental Strategies, 2006. IPCC Guidelines for National Greenhouse Gas Inventories - Energy - Stationary Combustion

[25] Fleiter, Tobias et al.: Mapping and analyses of the current and future (2020 - 2030) heating/cooling fuel deployment (fossil/renewables) - Work package 2: Data Annex 2 Industrial processes for publication

[26] S&P Global, <https://www.spglobal.com/platts/en/products-services/electric-power/world-electric-power-plants-database>

[27] International Renewable Energy Agency, <https://www.irena.org/statistics>

[28] European Union, <https://eur-lex.europa.eu/legal-content/DE/TXT/PDF/?uri=CELEX:32018R0842>

[29] Own Calculation, www.ffe.de/xos/laendersteckbriefe/methodik

Main Studies

- **Sweden 2013 Review** (International Energy Agency), http://www.iea.org/publications/freepublications/publication/Sweden2013_free.pdf
- **Energy in Sweden 2017** (Swedish Energy Agency), <https://energimyndigheten.a-w2m.se/FolderContents.mvc/Download?ResourceId=5733>
- **Swedish and Norwegian Electricity Certificate Market** (Swedish and Norwegian Energy Agency) <http://www.energimyndigheten.se/globalassets/fornbart/elcertifikat/the-norwegian-swedish-electricity-certificate-market-2016.pdf>
- **The Swedish Electricity and Natural Gas Market 2016** (Energy Market Inspectorate) https://www.ei.se/PageFiles/310277/EI_R2017_06.pdf

Abbreviations

RES	Renewable Energy Source
EFR	Effort Sharing Regulation
PEC	Primary Energy Consumption
GHG	Greenhouse Gases
ESD	Effort Sharing Decision
EU ETS	European Union Emissions Trading System
EL	Electricity
EU	European Union
TSO	Transmission System Operator