Latvia

IRENA
International Renewable Energy Agency

COUNTRY INDICATORS AND SDGS

GDP per capita / 8.1.1 Real GDP growth rate

7.3.1 Energy intensity

7.1.1 Access to electricity (% population) / 7.1.2 Access to clean cooking (% population) / 7.2.1 Renewable energy (% TFEC)

7.a.1 Public flows to renewables

7.b.1 Per capita renewable capacity

11.6.2 Air particulate matter (PM$_{2.5}$)
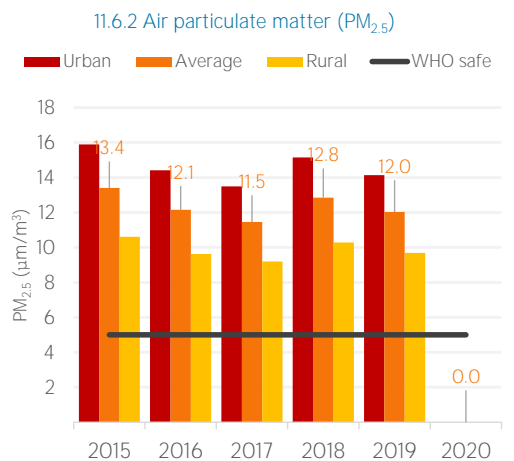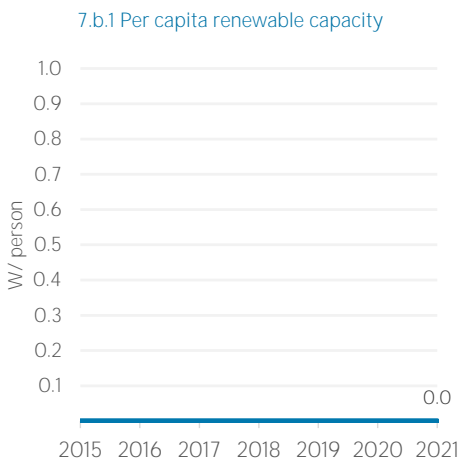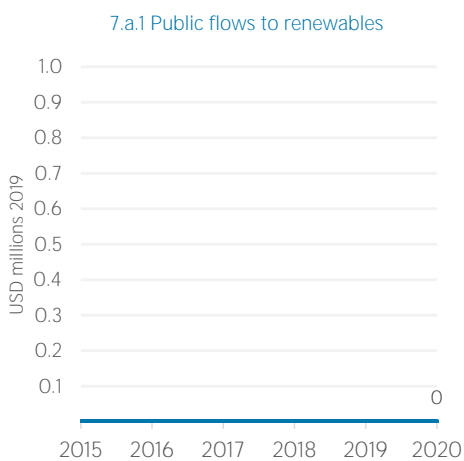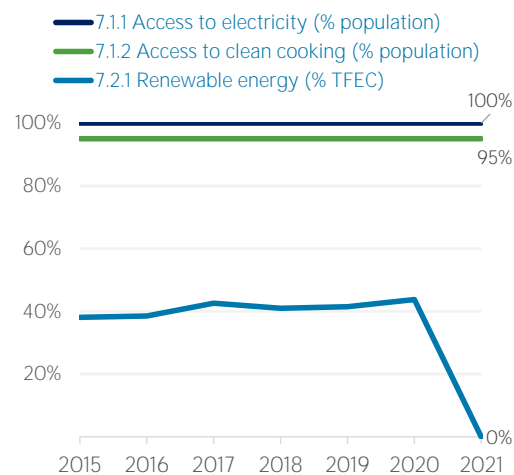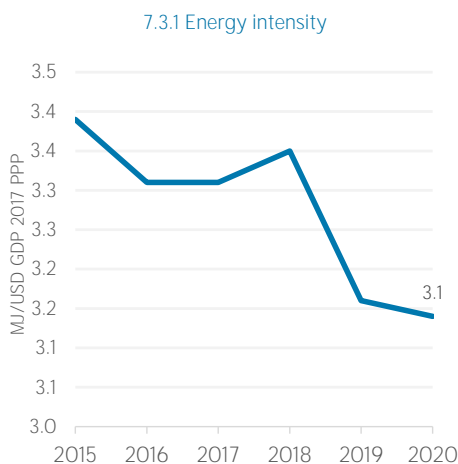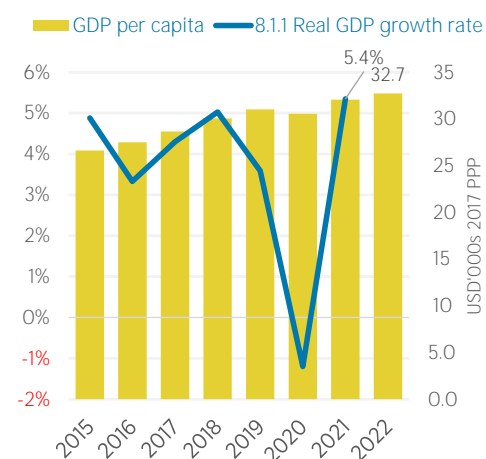
TOTAL ENERGY SUPPLY (TES)

Total Energy Supply (TES)	2015	2020
Non-renewable (TJ)	110 467	100 175
Renewable (TJ)	70 981	79 753
Total (TJ)	181 448	179 929
Renewable share (%)	39	44

Growth in TES	2015-20	2019-20
Non-renewable (%)	-9.3	-8.9
Renewable (%)	+12.4	-0.7
Total (%)	-0.8	-5.4

Primary energy trade	2015	2020
Imports (TJ)	189 939	166 018
Exports (TJ)	89 929	78 058
Net trade (TJ)	- 100 010	- 87 960
Imports (% of supply)	105	92
Exports (% of production)	90	69
Energy self-sufficiency (%)	55	63

Total energy supply in 2020

- Oil
- Gas
- Nuclear
- Coal + others
- Renewables
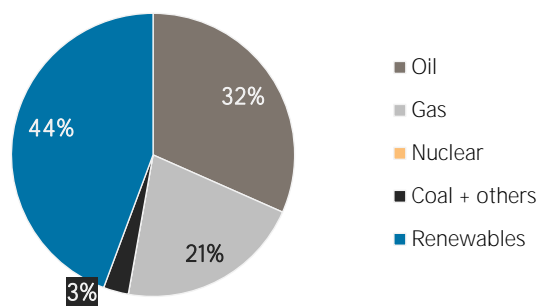
Renewable energy supply in 2020

- Hydro/marine
- Wind
- Solar
- Bioenergy
- Geothermal
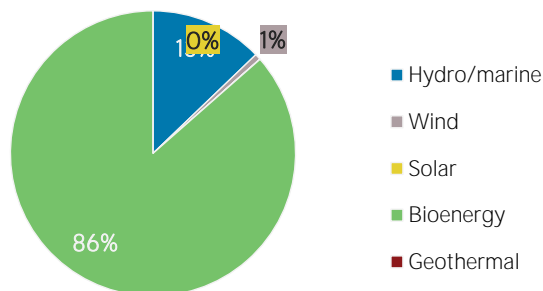
RENEWABLE ENERGY CONSUMPTION (TFEC)

Renewable TFEC trend

Legend: ■ Electricity ■ Commercial heat ■ Bioenergy ■ Geothermal ■ Solar direct

Petajoules (PJ)

Values along trend: 86 (2015), 98 (2016), 105 (2017), 101 (2018), 103 (2019), 102 (2020)

Renewable energy consumption in 2020

Pie chart (top):
- 13% Electricity
- 13% Commercial heat
- 74% Bioenergy

Pie chart (bottom):
- 23% Industry
- 2% Transport
- 30% Households
- 45% Other

n.a.

Legend: ■ Industry ■ Transport ■ Households ■ Other

Consumption by sector	2015	2020
Industry (TJ)	19 853	23 209
Transport (TJ)	1 153	2 035
Households (TJ)	27 749	30 582
Other (TJ)	36 828	46 156
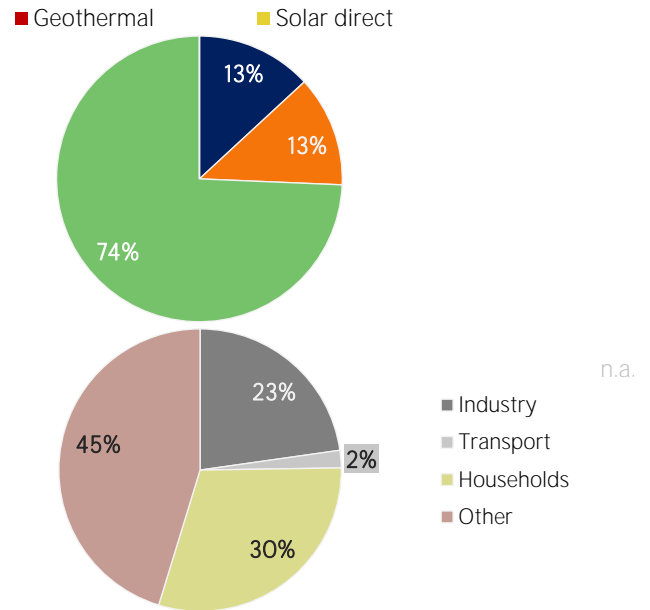
ELECTRICITY CAPACITY

Installed capacity trend

Legend: ■ Fossil fuels ■ Nuclear ▨ Other Non-RE ■ Hydro/marine ■ Wind ■ Solar ■ Bioenergy ■ Geothermal — Renewable share

Gigawatts (GW) / Renewable share (%)

Values: 2.9 (2015), 2.9 (2016), 2.9 (2017), 2.9 (2018), 2.9 (2019), 2.9 (2020), 2.9 (2021), 3.1 (2022)

Renewable share: 64%
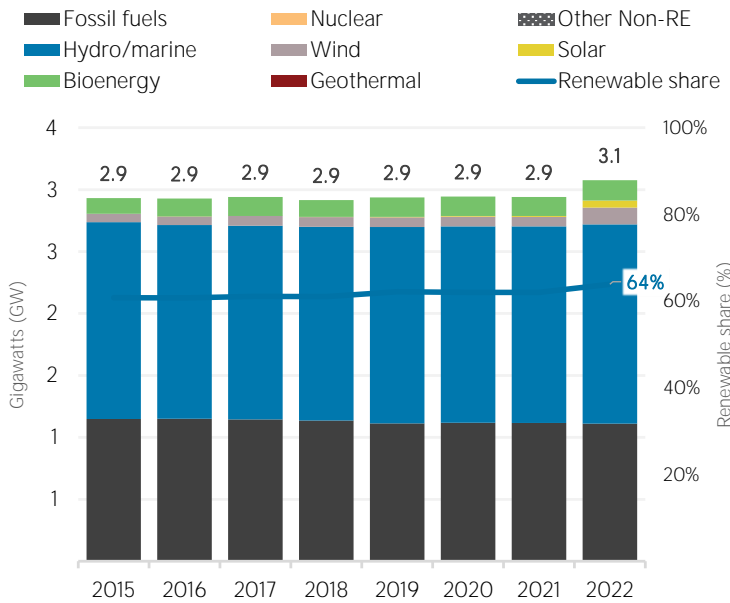
Renewable capacity in 2022

Pie chart:
- 82% Hydro/marine
- 3% Solar
- 7% Wind
- 8% Bioenergy

Legend: ■ Hydro/marine ■ Solar ■ Wind ■ Bioenergy ■ Geothermal

Net capacity change (GW)

Legend: ■ Fossil fuels ■ Renewable

Values by year:
- 2017: Fossil fuels 0.0, Renewable 0.0
- 2018: Fossil fuels 0.0, Renewable 0.0
- 2019: Fossil fuels 0.0, Renewable 0.0
- 2020: Fossil fuels 0.0, Renewable 0.0
- 2021: Fossil fuels 0.0, Renewable 0.0
- 2022: Fossil fuels 0.0, Renewable 0.1
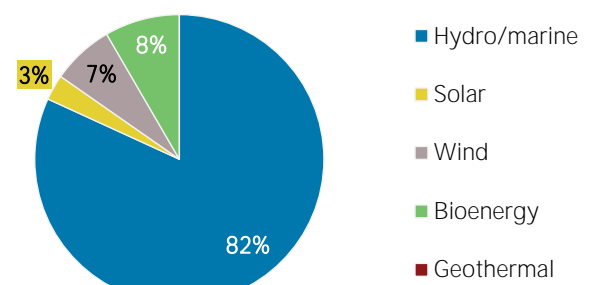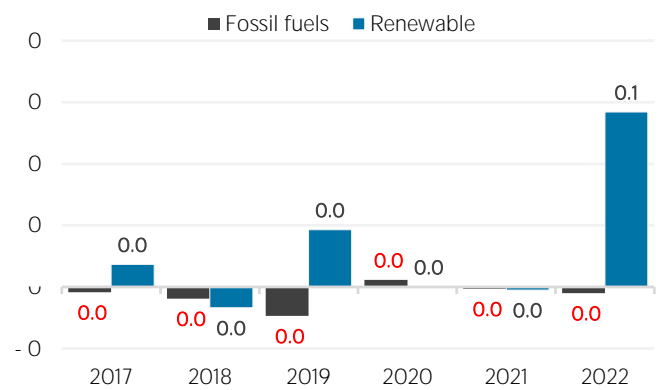
Net capacity change in 2022 (MW)

Non-renewable − 5	Hydro and marine + 21
Solar + 49	Wind + 59
Bioenergy + 13	Geothermal 0
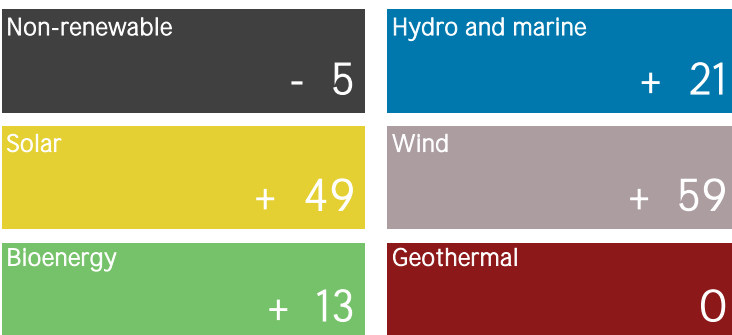
Capacity utilisation in 2021 (%)

- Fossil fuels: 22%
- Nuclear: (none)
- Hydro/Marine: 19%
- Solar: 13%
- Wind: 21%
- Bioenergy: 64%
- Geothermal: (none)
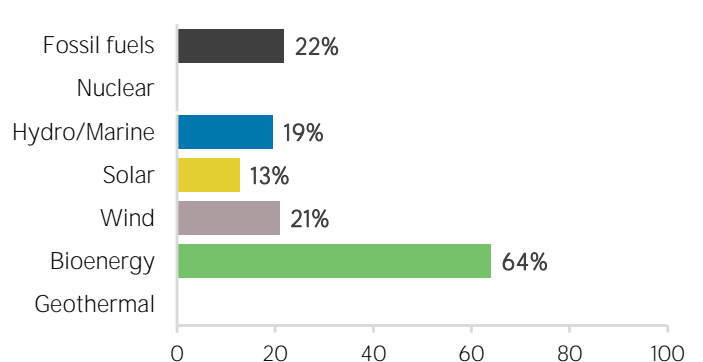
ELECTRICITY GENERATION

Generation in 2021

Generation in 2021	GWh	%
Non-renewable	2 128	36
Renewable	3 718	64
Hydro and marine	2 708	46
Solar	7	0
Wind	141	2
Bioenergy	862	15
Geothermal	0	0
Total	5 846	100

Per capita electricity generation (kWh)
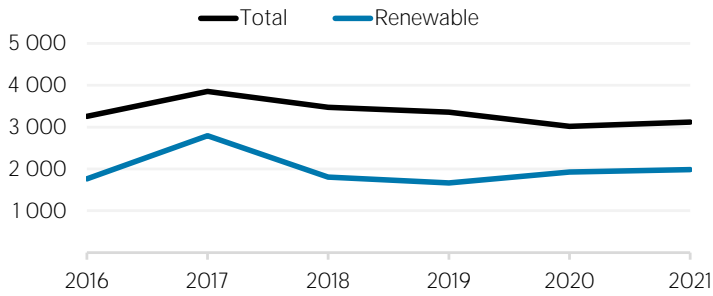
Electricity generation trend
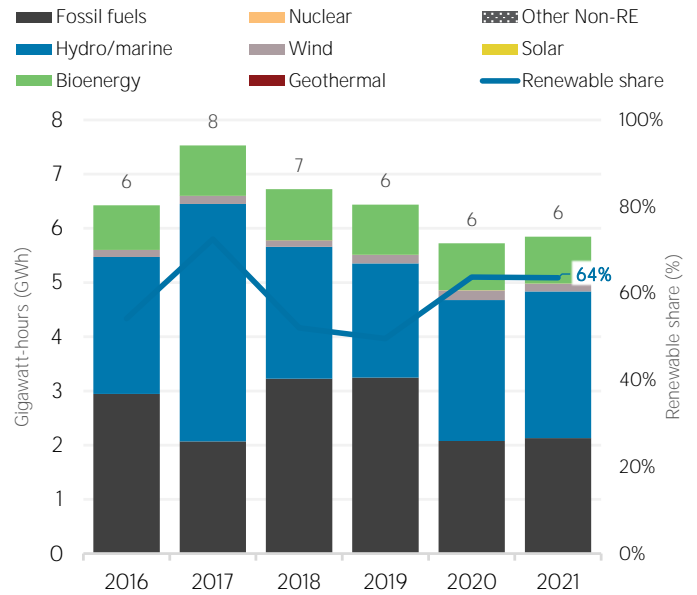

LATEST POLICIES, PROGRAMMES AND LEGISLATION

1 Electricity bill reductions for protected users — 2023

2 EUR 41.9 million for modernisation of electricity grids — 2023

3 Energy efficiency of apartment buildings 2022-2026 — 2022

4 Temporary household heating subsidies — 2022

5 Temporary reduction in electricity, gas and heating distribution tariffs — 2022
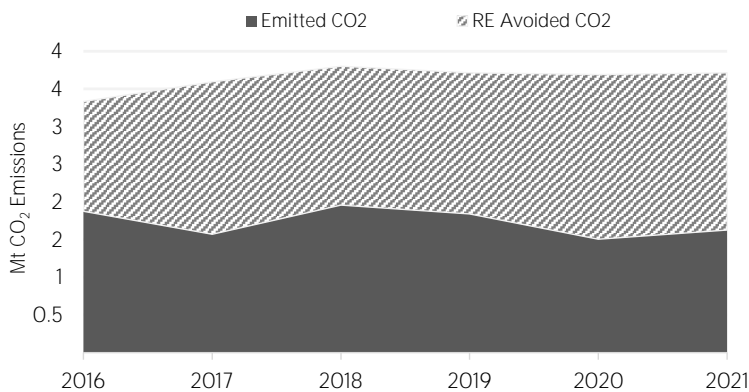
ENERGY AND EMISSIONS

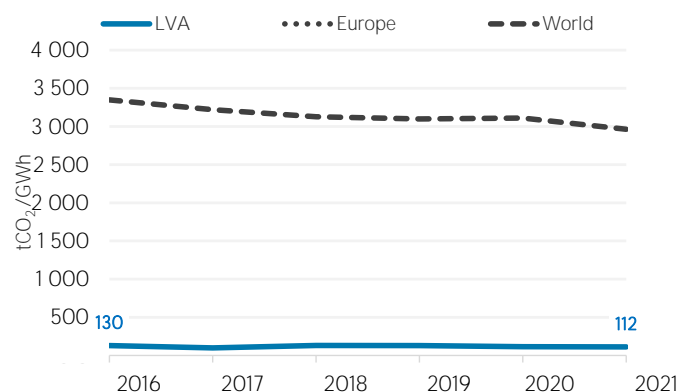## Energy-related CO_2 emissions by sector
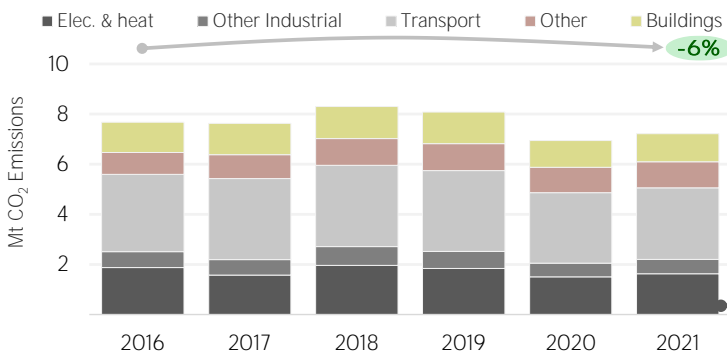
Elec. & heat generation CO_2 emissions in

- Coal + others
- Gas
- Oil

2 Mt CO_2
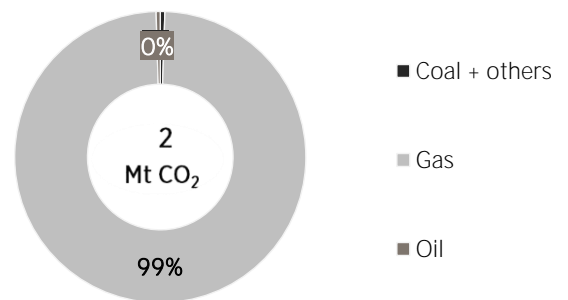
Avoided emissions from renewable elec. & heat

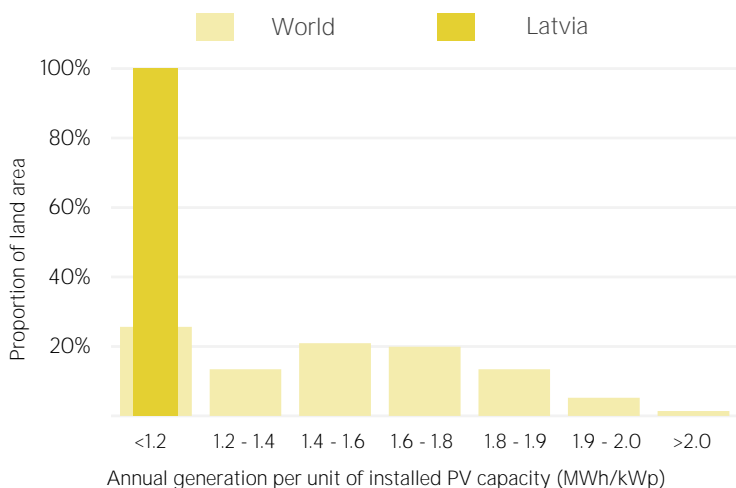*Avoided emissions based on fossil fuel mix used for power*

CO_2 emission factor for elec. & heat generation

Calculated by dividing power sector emissions by elec. + heat gen.

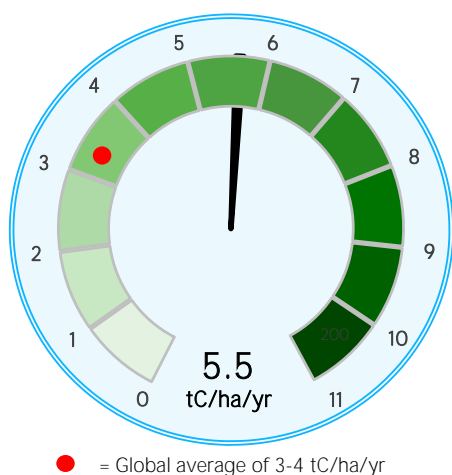## Distribution of solar potential

World   Latvia

Proportion of land area

100%
80%
60%
40%
20%

<1.2   1.2 - 1.4   1.4 - 1.6   1.6 - 1.8   1.8 - 1.9   1.9 - 2.0   >2.0

Annual generation per unit of installed PV capacity (MWh/kWp)

Distribution of wind potential

World   Latvia

Proportion of land area

100%
80%
60%
40%
20%

<260   260-420   420-560   560-670   670-820   820-1060   >1060

Wind power density at 100m height (W/m²)
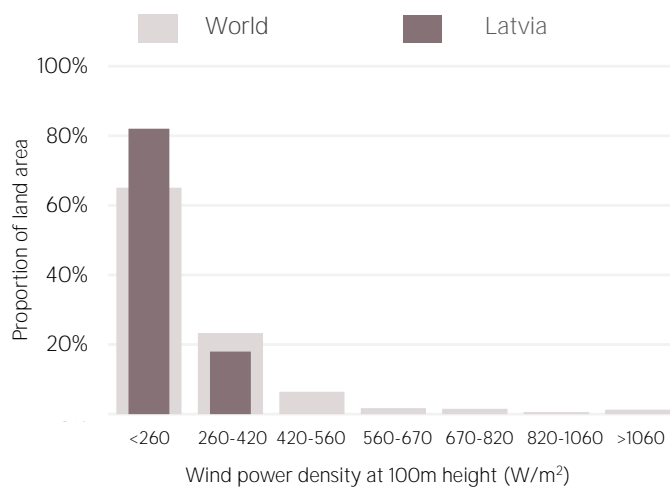
Biomass potential: net primary production

5   6
4   7
3   8
2   9
1   200   10
0   11

5.5
tC/ha/yr

● = Global average of 3-4 tC/ha/yr

Indicators of renewable resource potential

Solar PV: Solar resource potential has been divided into seven classes, each representing a range of annual PV output per unit of capacity (kWh/kWp/yr). The bar chart shows the proportion of a country's land area in each of these classes and the global distribution of land area across the classes (for comparison).

Onshore wind: Potential wind power density (W/m²) is shown in the seven classes used by NREL, measured at a height of 100m. The bar chart shows the distribution of the country's land area in each of these classes compared to the global distribution of wind resources. Areas in the third class or above are considered to be a good wind resource.

Biomass: Net primary production (NPP) is the amount of carbon fixed by plants and accumulated as biomass each year. It is a basic measure of biomass productivity. The chart shows the average NPP in the country (tC/ha/yr), compared to the global average NPP of 3-4 tonnes of carbon