

# Greenhouse Gas Emissions from Reykjavik Energy Group 2015-2018

The greenhouse gasses accounted for are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), sulphur hexafluoride (SF<sub>6</sub>), tetrafluoroethane (HFC-134a) and nitrous dioxide (N<sub>2</sub>O). Greenhouse gas emissions from ON Power's geothermal power plants in Nesjavellir and Hellisheidi are based on their operations along with drilling of makeup wells in the geothermal fields. Veitur Utilities' emissions from its supply and distribution system are due to the operation of backup generators. Emissions of carbon dioxide and methane from Hellisheidi and Nesjavellir reduced in 2018 compared to 2015. Methane emissions from Nesjavellir, Hellisheidi and Hverahlid were less. Greenhouse gas emissions from the vehicle fleet were reduced from previous years. Sulphur hexafluoride (SF<sub>6</sub>) is used as insulating gas in high-voltage electrical equipment in ON Power's power plants and Veitur Utilities' supply and distribution system. SF<sub>6</sub> is also used in trace flow test (TFT) measurements of high-temperature production wells.

GREENHOUSE GAS	ORIGIN	UNIT	2015	2016	2017	2018
<b>Carbon dioxide (CO<sub>2</sub>)</b>	Nesjavellir	t	14,700	14,700	14,000	14,200
	Hellisheidi and Hverahlid	t	33,100	26,100	23,600	25,200
	Low-temperature geothermal fields	t	0	0	0	0
	Supply and distribution system	t	5	2	3	1
	Vehicle fleet (CO <sub>2</sub> equivalence)	t	540	560	550	510
	Flights, international and domestic (CO <sub>2</sub> equivalence)	t	70	65	70	75
	Office waste for landfilling (CO <sub>2</sub> equivalence)	t	26	20	29	28
	Worksite waste for landfilling (CO <sub>2</sub> equivalence)	t	260	280	360	320
	Organic waste for compost (CO <sub>2</sub> equivalence)	t	5	4	5	5
<b>Total CO<sub>2</sub></b>		<b>t</b>	<b>48,706</b>	<b>41,730</b>	<b>38,617</b>	<b>40,339</b>
<b>Methane (CH<sub>4</sub>)</b>	Nesjavellir	kg	54,000	44,000	31,000	30,000
	Hellisheidi and Hverahlid	kg	80,000	48,000	49,000	50,000
	<b>Total CH<sub>4</sub></b>	<b>kg</b>	<b>134,000</b>	<b>92,000</b>	<b>80,000</b>	<b>80,000</b>
<b>Nitrous oxide (N<sub>2</sub>O)</b>	Supply and distribution system	kg	0	0	0	0
	<b>Total N<sub>2</sub>O</b>	<b>kg</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Tetrafluoroethane (HFC-134a)</b>	Supply and distribution system	<b>kg</b>	15	15	15	15
	<b>Total HFC-134a</b>	<b>kg</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>
<b>Sulphur hexafluoride (SF<sub>6</sub>)<sup>1</sup></b>	Nesjavellir	kg				
	Hellisheidi	kg		0.26		
	Tracer flow tests (TFT) in the Hengill area	kg	0.04	0.08	0.08	0.09
	Supply and distribution system	kg				
	<b>Total SF<sub>6</sub></b>	<b>kg</b>	<b>0.04</b>	<b>0.34</b>	<b>0.08</b>	<b>0.09</b>

<sup>1</sup>Total amount of SF<sub>6</sub> in electronic equipment is approx. 5.7 tonnes and approx. 1 tonne is in supplies. RE's R&D holds approx. 0.4 kg of SF<sub>6</sub> in supplies.

Information for global warming potential (GWP) of greenhouse gasses, see: [http://www.ipcc.ch/pdf/assessment-report/ar5/wg1/WG1AR5\\_Chapter08\\_FINAL.pdf](http://www.ipcc.ch/pdf/assessment-report/ar5/wg1/WG1AR5_Chapter08_FINAL.pdf) and in appendices on Conversion coefficients