



Lowering life cycle emissions from power stations

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Landsvirkjun

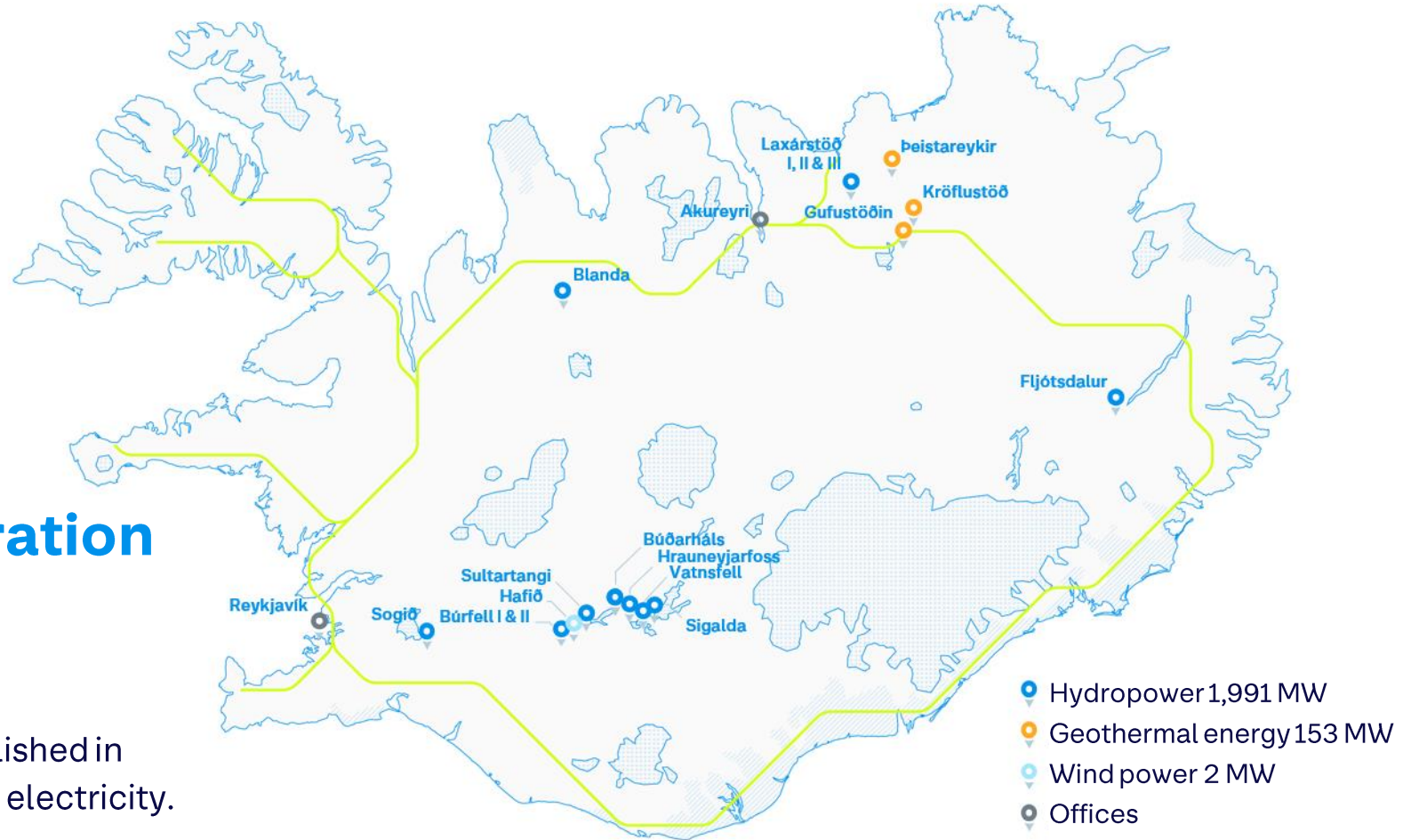
WHO ARE WE?

100% renewable energy

Minimal carbon footprint

Sustainable energy generation

Landsvirkjun is a state-owned company, established in 1965, which generates approx. 3/4 of Iceland's electricity.





Ljósafossstöð 1937

Hydropower
16 MW
105 GWh/year



Laxárstöð I 1939

Hydropower
5 MW
3 GWh/year



Laxárstöð II 1953

Hydropower
9 MW
78 GWh/year



Írafossstöð 1953

Hydropower
48 MW
236 GWh/year



Steingrímsstöð 1959

Hydropower
27 MW
122 GWh/year



Gufustöðin 1969

Geothermal
5 MW
42 GWh/year



Búrfellsstöð 1972

Hydropower
270 MW
2,300 GWh/year



Laxárstöð III 1973

Hydropower
13,5 MW
92 GWh/year



Kröflustöð 1977

Geothermal
60 MW
500 GWh/year



Sigöldustöð 1978

Hydropower
150 MW
920 GWh/year



Hrauneyjafossst. 1981

Hydropower
210 MW
1,300 GWh/year



Blöndustöð 1991

Hydropower
150 MW
990 GWh/year



Sultartangastöð 1999

Hydropower
125 MW
1,020 GWh/year



Vatnsfellsstöð 2001

Hydropower
90 MW
490 GWh/year



Fljótsdalsstöð 2007

Hydropower
690 MW
5,000 GWh/year



Hafið 2013

Wind power
1,9 MW
6,7 GWh/year



Búðarhálsstöð 2014

Hydropower
95 MW
585 GWh/year



Beistareykjastöð 2017

Geothermal
90 MW
738 GWh/year



Búrfellsstöð II 2018

Hydropower
100 MW
700 GWh/year

Landsvirkjun Power stations
15 Hydropower stations
3 Geothermal stations
1 Wind farm (2 windmills)

Upcoming projects



Búrfellslundur Wind Farm



Hvammur Hydropower Station



**Sigalda Hydropower Station
(Expansion)**



**Þeistareykir Geothermal Station
(Expansion)**

Landsvirkjun's Vision is a Sustainable World,
Powered by Renewable Energy

Landsvirkjun is at the Forefront of Environmental and Climate Issues

Climate and Environmental Policy

Climate

- » Landsvirkjun intends to achieve carbon neutrality and actively participates in the global response to climate change
- » We systematically work towards reducing our carbon emissions, supporting Iceland's commitment to the Paris Agreement, and responding to climate change-induced challenges and opportunities

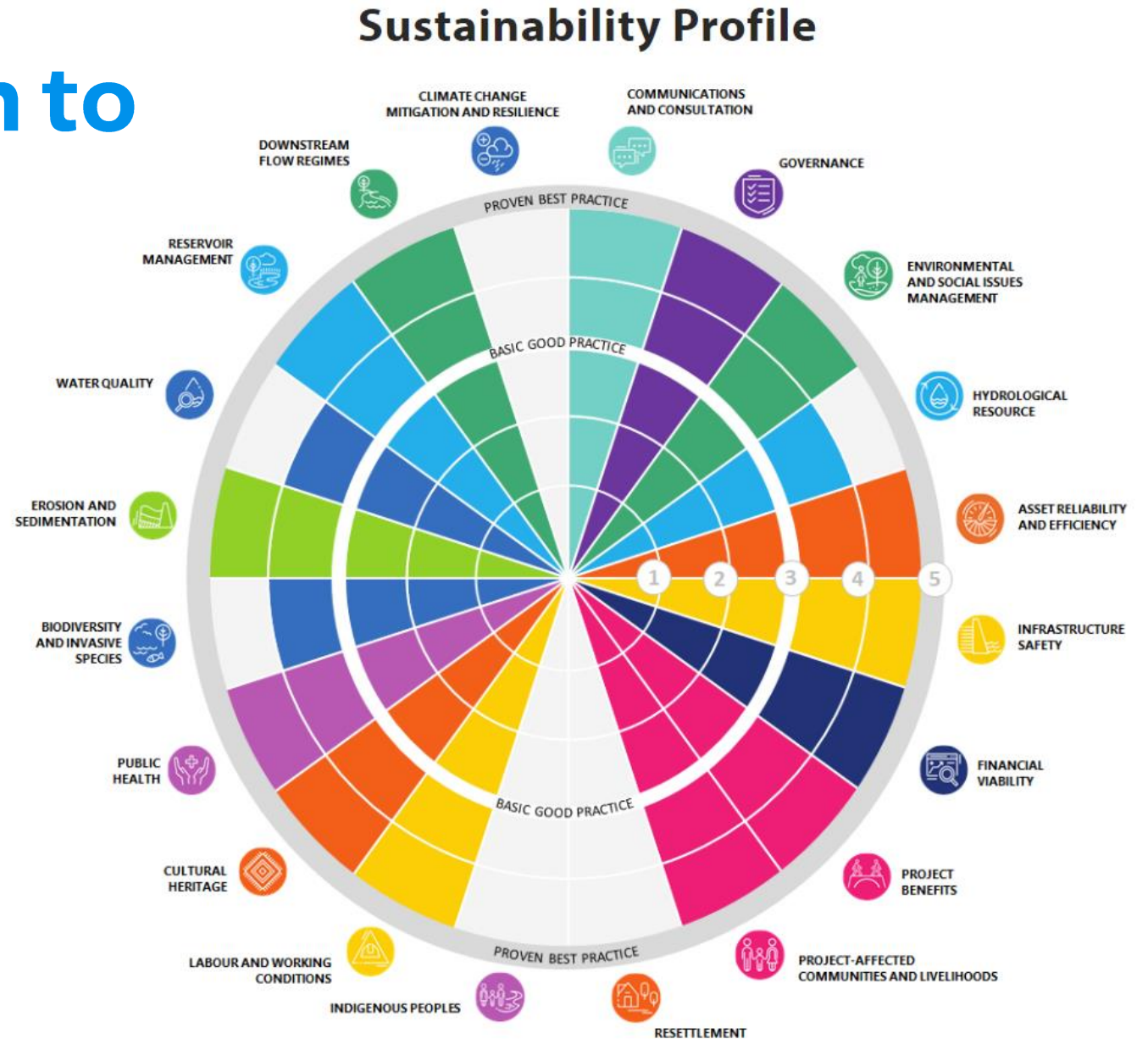
Nature and resource utilisation

- » We respect the Icelandic landscape and natural environment and continually strive to optimise the use of resources and prevent waste
- » Emphasis is placed on understanding and minimising the environmental impact of our operations and preventing environmental incidents

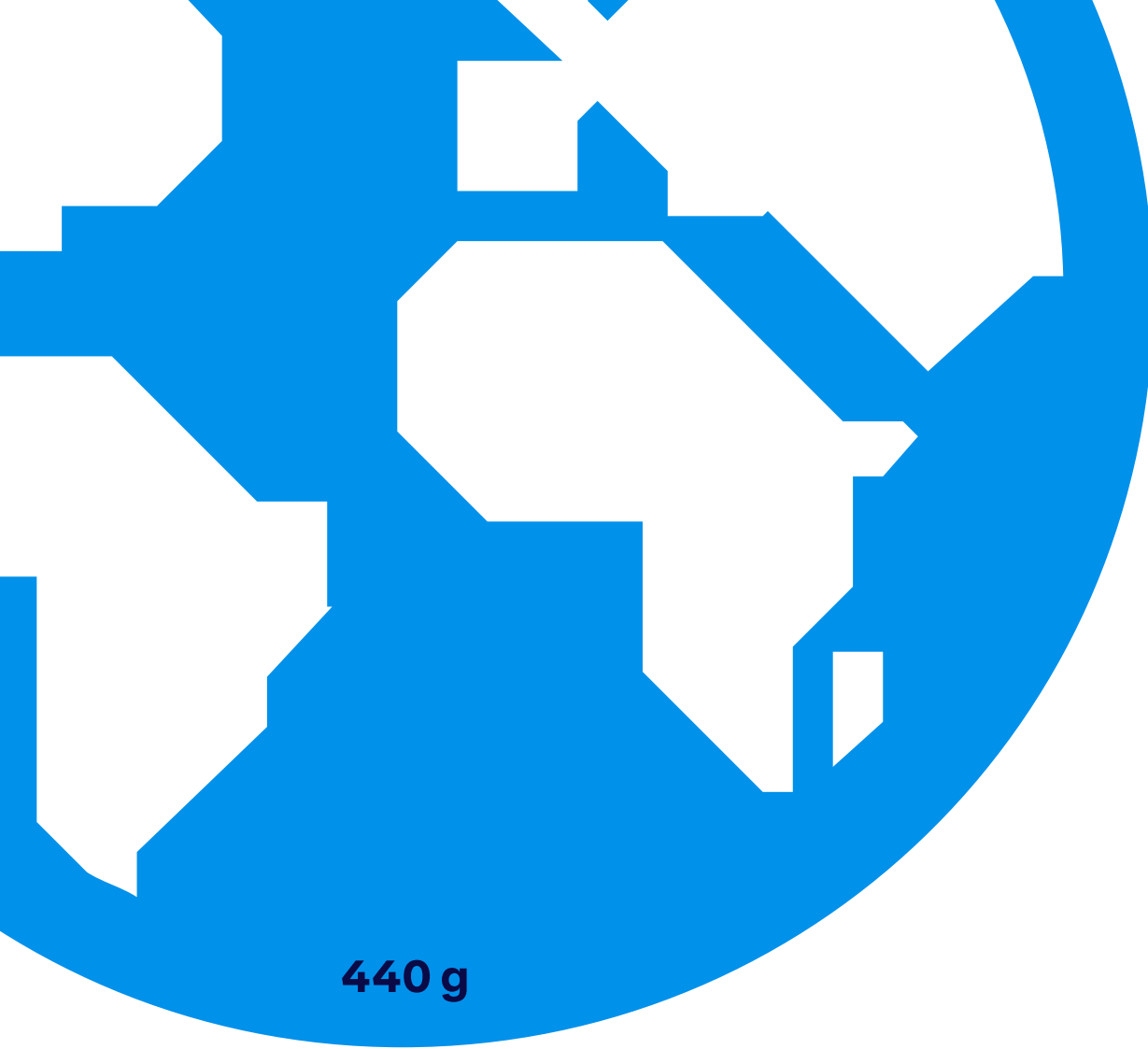
Holistic Approach to Sustainability

Blanda power station has been recognized for its sustainable efforts in the development of hydropower.

The project was awarded the International Hydropower Association's coveted **Blue Planet Prize in 2017**.



Renewable Energy is Key to Tackling the Climate Crisis



Global carbon intensity of electricity generation

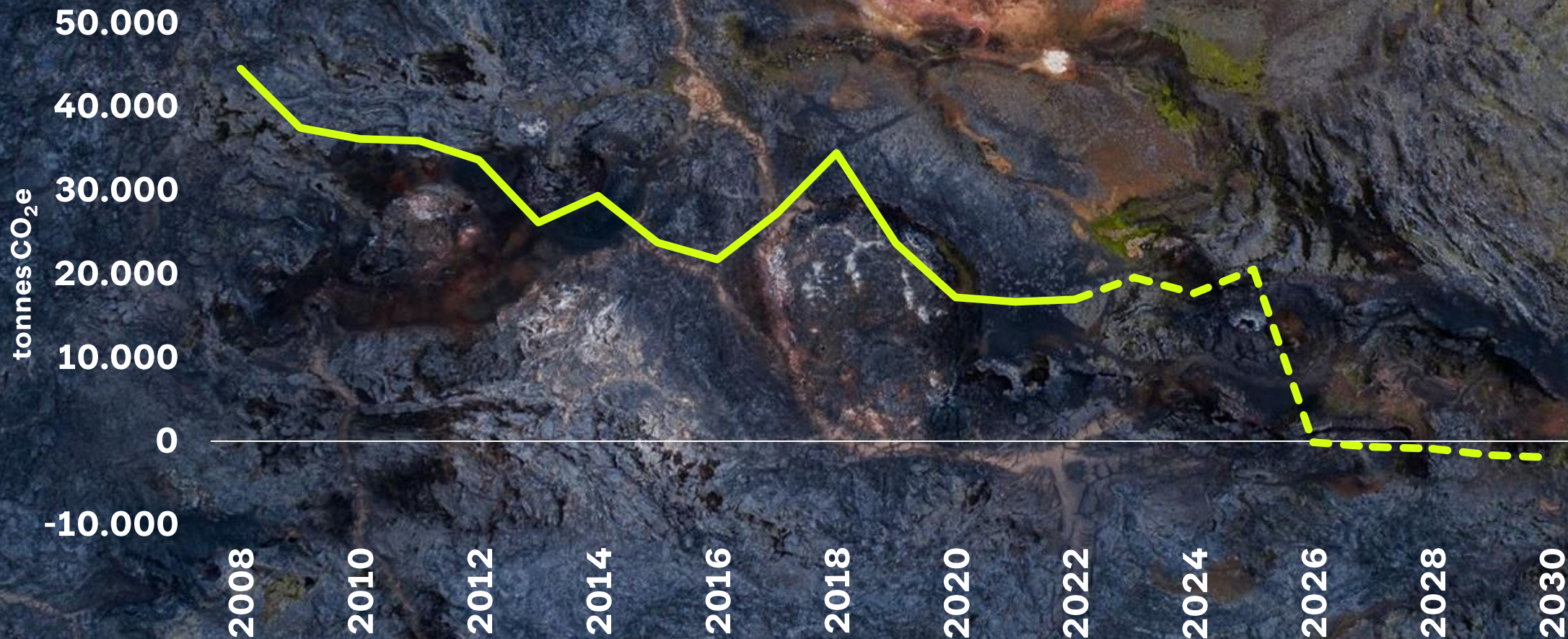


EU's benchmark for electricity generation mitigating climate change



Landsvirkjun's carbon intensity

Carbon neutral in 2025



Landsvirkjun's carbon footprint has decreased by 61% from 2008



LCAs for Landsvirkjun's power stations

Hydropower

- › Blanda Power Station (2001, updated 2018)
- › Fljótsdalur Power Station (2011, updated 2018)
- › Búðarháls Power Station (2018)
- › Búrfell II Power Station (2020)

Geothermal energy

- › Peistareykir Power Station (2020)

Wind power

- › Hafið Wind Farm (2015)

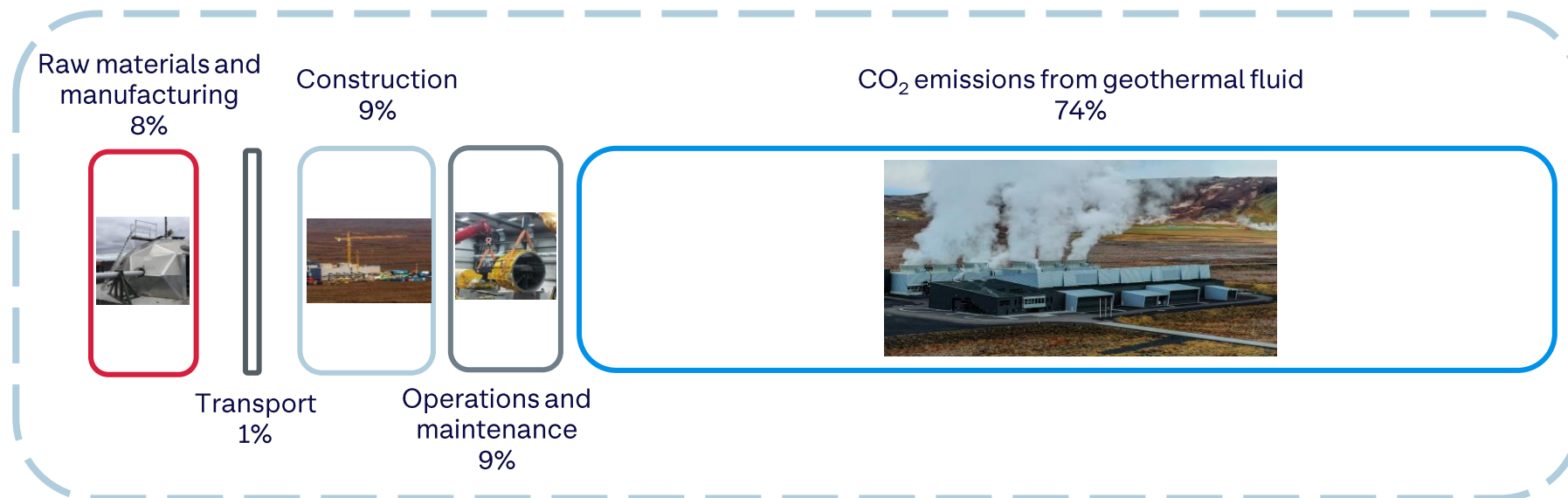
LCA results: Fljótsdalur Hydropower Station

Carbon footprint: 1,2 g CO₂ e/kWh over a 100-year lifetime



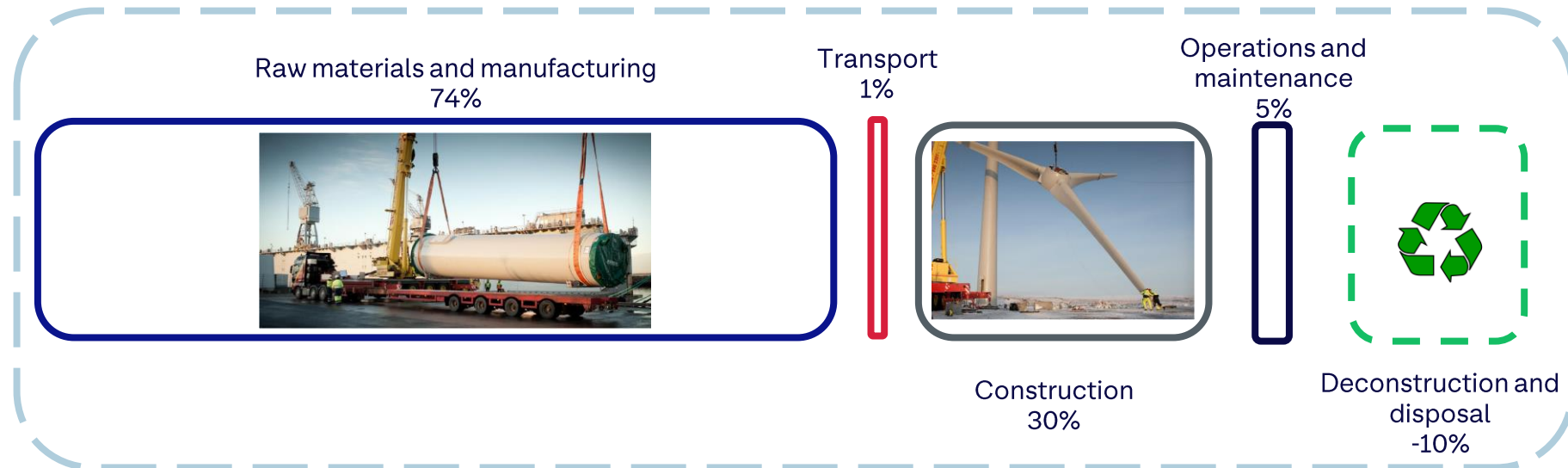
LCA results: Þeistareykir Geothermal Station

Carbon footprint: 13,8 g CO₂ e/kWh over a 40-year lifetime



LCA Results: Hafið Wind Farm

Carbon footprint: 5,3 g CO₂ e/kWh over a 25-year lifetime



Three Largest Sources of Emissions in Our Construction Projects

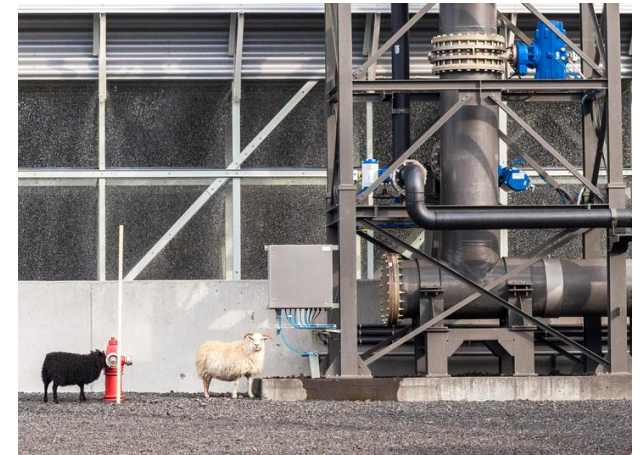
Fossil Fuel



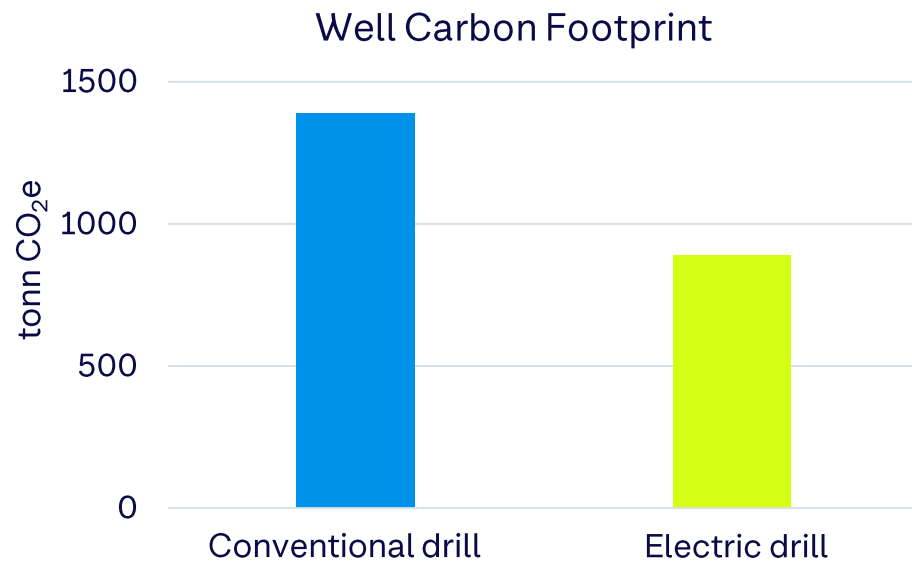
Concrete



Steel



Electric Drilling



» Up to 35% lower emissions for each well



Construction Materials With a Lower Carbon Footprint

Þjórsá Bridge

Icelandic timber



Búrfell II Hydropower Station

Green concrete with a 20% lower carbon footprint



Internal Carbon Price Used in Tender Documents

GHG emissions included as a selection criteria in tenders

- › Bidders asked to include emissions estimates with offers
- › Internal carbon price used to evaluate offers (USD/tCO₂e)
- › Contractors provide emissions data during construction
 - › Financial incentives if under initial estimate
 - › Financial penalty if over initial estimate



