

# CLIMATE DECLARATION

## FOR ELECTRICITY FROM VATTENFALL'S NUCLEAR POWER

Functional unit: 1 kWh net electricity

The climate declaration shows the emissions of greenhouse gases, expressed as CO<sub>2</sub>-equivalents. It is based on verified results from a life cycle assessment (LCA) performed as basis for an EPD® (Environmental Product Declaration), in accordance with ISO 14025.

### Product

Vattenfall AB has majority ownership in seven reactors in Sweden, three reactors at Forsmark and four reactors at Ringhals. In 2018, nuclear generation represented 42% of Sweden's electricity production. Vattenfall's Ringhals and Forsmark nuclear reactors produced 55.2 TWh of Vattenfall's total electricity generation at 130.3 TWh.



Ringhals and Forsmark Nuclear power plants

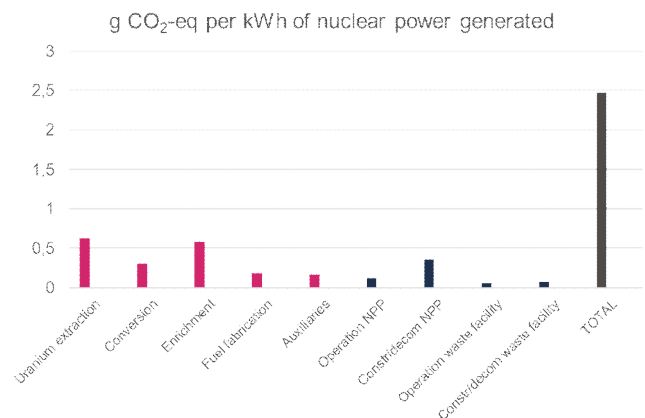
### Company

Vattenfall AB is one of Europe's major retailers of electricity and heat and one of the largest producers of electricity and heat. Forsmarks Kraftgrupp and Ringhals AB are both part of Vattenfall AB and responsible for the operation of the nuclear power plants. Vattenfall owns 66% of Forsmark and 70,4% of Ringhals. Both Forsmark and Ringhals have certified management systems for environment and health & safety according to ISO 14001 and ISO 45001.

### Climate Declaration

The whole life cycle of nuclear power has been inventoried, hence the full path from mining of natural uranium, through production of uranium fuel and generation of electricity at the nuclear power plant to final repository of the spent fuel is

included. The uranium quantities from each process have been calculated based on the power plant's average annual requirement of fuel, and suppliers inventoried have been selected to cover different technologies as well as different geographies. According to the LCA results the total emission of greenhouse gases is about 3 g CO<sub>2</sub>-equivalents per generated kWh.



### Other Environmental Information

The complete certified declaration also contains information on calculation methods, greenhouse gas emissions due to distribution of electricity, and LCA results for other emissions, resource use and waste as well as descriptions of environmental risks, safety barriers and radiation, and impacts on biodiversity in accordance with the EPD® system requirements.

### Contact Details

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LINK TO MORE INFORMATION: <a href="http://WWW.ENVIRONDEC.COM/">WWW.ENVIRONDEC.COM/</a>		EPD PROGRAMME: THE INTERNATIONAL EPD® SYSTEM, <a href="http://WWW.ENVIRONDEC.COM">WWW.ENVIRONDEC.COM</a>
EPD REGISTRATION NO: S-P-00923	PCR CPC171/173 2015:3.1	PCR REVIEW CONDUCTED BY: IEC TECHNICAL COMMITTEE
INDEPENDENT VERIFICATION OF THE DECLARATION AND DATA, ACCORDING TO ISO 14025, HAS BEEN PERFORMED WITHIN VATTENFALL'S CERTIFIED EPD MANAGEMENT PROCESS.		
THIRD PARTY VERIFICATION OF VATTENFALL'S EPD MANAGEMENT PROCESS HAS BEEN CONDUCTED BY THE ACCREDITED CERTIFICATION BODY: BUREAU VERITAS CERTIFICATION (ACCREDITED BY SWEDAC)		
CLIMATE DECLARATIONS FROM DIFFERENT PROGRAMMES ARE NOT COMPARABLE		
READ MORE ABOUT CLIMATE DECLARATIONS AT <a href="http://WWW.CLIMATEDEC.COM">WWW.CLIMATEDEC.COM</a>		VALIDITY: 2022-12-31