



TRADITIONAL WATER USAGE

All water taken from a source is known as water withdrawn. To operate a thermoelectric power generation plant, water is withdrawn from a natural water source and transported to the thermoelectric power generation plant. Once on-site, the withdrawn water is used for cooling, distribution, and extraction. After withdrawal, water can either be consumed or returned to its original source. Of note, the water is often returned at a higher temperature, which can contribute to thermal pollution.



WATER CONSUMPTION AVOIDED IN RENEWABLES

When water is utilized for electrical production, it is known as embedded water use. Solar and wind electrical production requires little to no embedded water use. Solar and wind energy projects do not require water for cooling, distribution, or extraction. Because of this, renewable energy can avoid the withdrawal and consumption of millions of gallons of water as compared to traditional thermoelectric power generation plants.

DEFINITIONS

Natural Water Source: Rivers, lakes, oceans, and more

Water Withdrawals: All water removed from its source for a specific use, also known as water intake

Return Flow: Water withdrawals that are returned to their original source and available for other uses

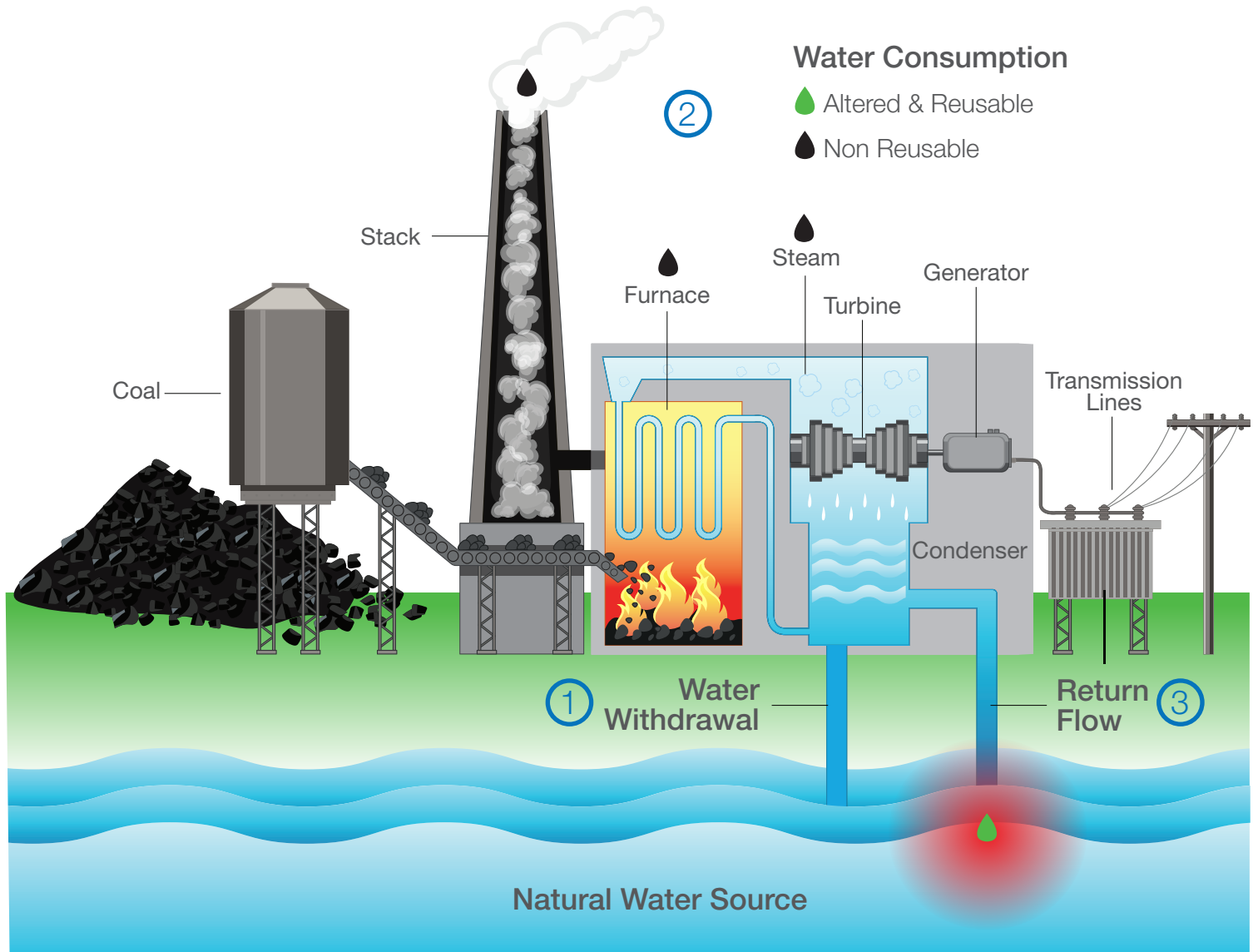
Water Consumption: Water consumed and permanently lost from its source

Thermoelectric Power Generation: includes coal, natural gas, and nuclear power sources



Did You Know: Water used during electricity generation represents one of the largest sources of water withdrawals and is projected to grow by 140% by 2050

THERMOELECTRIC EXAMPLE: HOW A COAL POWER PLANT USES WATER



- ① Water is withdrawn from a natural water source and pumped into the coal plant.
- ② Some of the withdrawn water is consumed for cooling, distribution, and or extraction. This water is not reusable.
- ③ The rest of the withdrawn water is returned to the natural source in an altered state.

Sources: OECD (Organisation for Economic Co-operation and Development), 2012. "OECD Environmental Outlook to 2050: The Consequences of Inaction." Highlights Document. <https://www.oecd.org/env/indicators-modelling-outlooks/49846090.pdf>, : Reig, P., T. Luo, E. Christensen, and J. Sinistore. 2020. "Guidance for Calculating Water Use Embedded in Purchased Electricity." Working Paper. Washington, DC: World Resources Institute. Available online at www.wri.org/publication/

ABOUT NATIONAL GRID RENEWABLES

National Grid Renewables is a leading North American renewable energy company based in Minneapolis, Minnesota where it develops, constructs, and operates. As a farmer-friendly and community focused company, National Grid Renewables develops projects for corporations and utilities that seek to repower America's electricity grid by reigniting local economies and reinvesting in a sustainable future. National Grid Renewables is part of the Ventures division of National Grid and has a robust portfolio of solar, wind, and energy storage projects located throughout the United States in various stages of development, construction and operation.