FUSION ENERGY
WORLDWIDE DEMAND REPORT

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FUSION ENERGY MARKET

BY 2050

79%

ELECTRICITY GROWTH

BY 2050

10%

AI/DATA CENTER POWER DEMAND

BY 2050

24%

FUSION POWERED ELECTRICITY

BY 2050

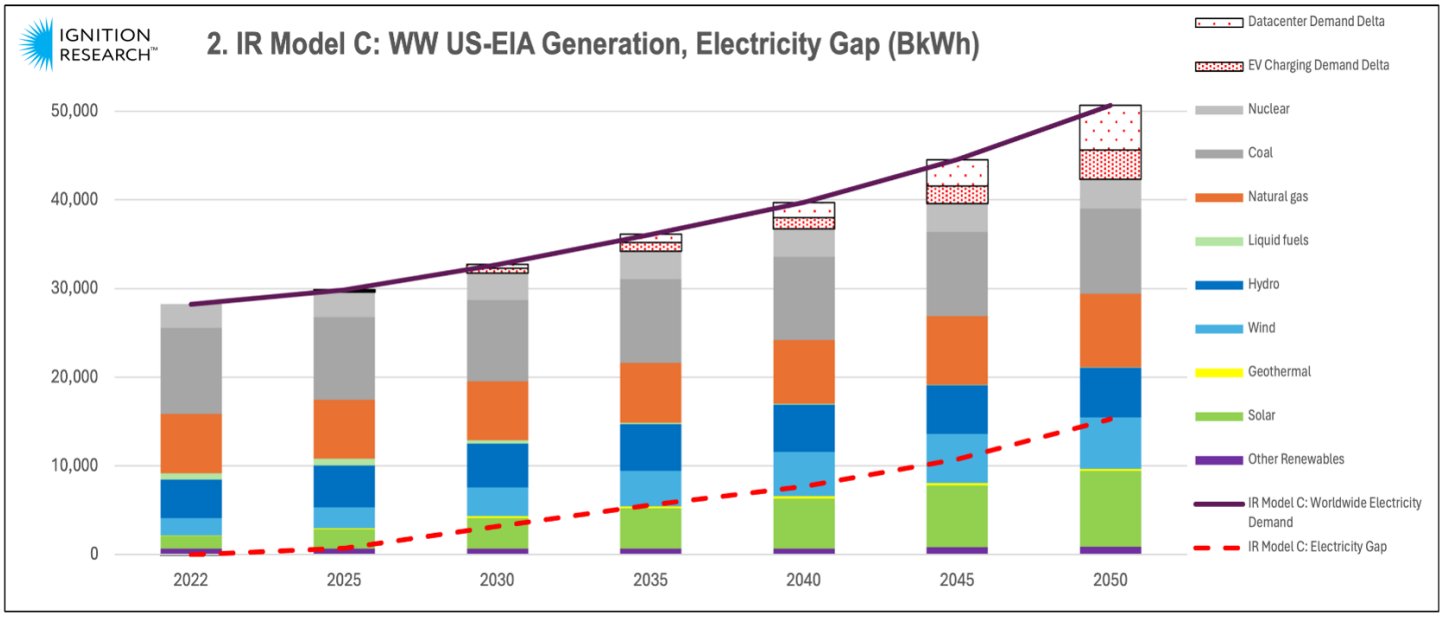
Ignition Research, a leading market analysis firm for next-generation energy solutions and their applications, announces our Fusion Energy and Electricity Demand Forecasts. These offerings provide insights into the companies engaged in fusion energy, artificial intelligence (AI) and large-scale data centers, electric vehicles and charging networks, and high-energy manufacturing technologies with the opportunity to showcase their products and technologies. There are several standard programs within our Fusion Energy Market offerings, all of which can be tailored to the specific needs of Ignition Research customers.

REPORT HIGHLIGHTS

Ignition Research, a leading market analysis firm for next-generation energy solutions and their applications announces our Fusion Energy and Electricity Demand Forecasts. The beta version of the Fusion Energy Worldwide Demand Market Report forecasts the worldwide demand for electricity and the projected adoption of fusion energy within the worldwide electricity market. The forecast extends from 2025 through 2050 in 5-year increments. It provides a breakdown by key markets driving significant power demands (industrial, AI/Data Centers, EVs, air-conditioning, and EVs) and breaks down this data by major geographical regions.

- **79% Growth in Electricity Demand** - Factors increasing electricity forecasts from the US Energy Information Agency (US-EIA) and the International Energy Agency (IEA) up to 79% growth by 2050.
- **24% of Electricity Power by Fusion** - Fusion energy market adoption and estimates that electricity generated from fusion will be up to 23.9% of WW electricity generation by 2050.
- **Fusion Power Systems Forecast** - Forecast for utility-level 1GW power plants required to meet the net gains in 24/7 power generation in 5-year increments.
- **Target Industries for Fusion** - electricity generation, EV charging, AI & data centers, industrial (steel, plastics, etc.), and heating (facilities and manufacturing).
- **Key Geographies** - United States & Canada, China, India, Rest of Asia, E/W Europe, Eurasia, Russia, Africa/Middle East, Japan/Korea, Australia/New Zealand and Latin America (Mex, C/S America.)

WOLRDWIDE POWER DEMAND FORECAST
THE ELECTRICITY GAP



The gold standard for forecasting electricity demand and generation today is the United States Energy Information Agency (US-EIA) forecast, which goes through 2050. The most recent US-IEA forecast shows renewals growing to 49.8% of WW power generation (with solar at 20.1% and wind at 13.7%), while fossil fuels will be down to 42.4%. However, there are some problems with the US-EIA's forecast.

30%

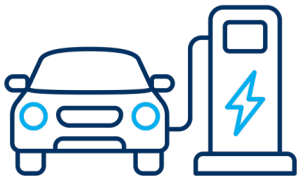
WW ELECTRICITY GENERATION GAP

BY 2050

- **Renewables Supply and Supply Chain Risks** - Growth (over 2.5X between 2022 and 2050) seems aspirational, especially given that China produces over 90% of all solar panels, over 75% of wind turbines, and over 84% of Lithium batteries today.
- **AI Data Center & EV Demand Underestimated** - Many drivers of electrical demand are underestimated, specifically the electrical needs for EV charging (increases demand by over 7% by 2050) and for hyper-scale data centers (increases demand by nearly 12% by 2050).
- **24% Electricity Gap Will be Closed by Fusion** - These factors will increase the demand for electricity by roughly 16% by 2050 and create a significant "electricity gap", which will only worsen if fossil fuels are cut back further to meet global climate initiatives. From our perspective, this "electricity gap" will only likely worsen over time.
- **Directly Dispatchable 24/7 Power** - Fusion is the ONLY green electricity source that can be directly dispatched to the grid 24/7 and can be a plug-and-play replacement for current water-heating power plants.

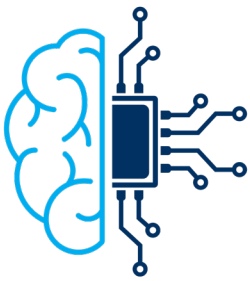
EIA Data: https://www.eia.gov/outlooks/ieo/data.php

EV CHARGING ELECTRICITY DEMAND REPORT



Ignition Research has built a forecast for the global EV electricity demand for charging across the standard US Department of Transportation sector for light, medium, and heavy vehicles classifications and standard mileage forecast by each class. This has been combined with reports on EV vehicle volumes, the IEA, and Bloomberg to forecast the total global EV charging power demand.

AI & DATA CENTER DEMAND REPORT

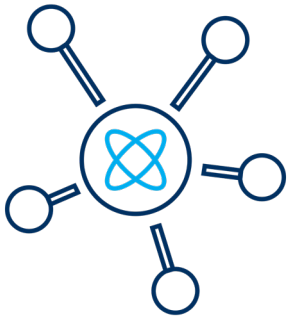


As AI becomes the leading form of computing over the new decade, Ignition Research predicts that individual rack power consumption will rise from 20Kw per rack to over 100Kw per rack as the market moves to GPU (Graphic Processing Units) architectures. This is creating data centers that consume upwards of 1GW requiring dedicated power plants. Our research indicates that AI-driven data centers will drive consumption from 2% to over 12% of global electricity demand.

FUSION ENERGY TRANSPORTATION REPORT

Space and major shipbuilders are actively investing in fusion power systems to lower costs and reduce their carbon footprint. Leading space companies and government agencies are working with fusion developers to build new solutions that reach beyond our world. Ignition Research will forecast the market demand timeline and the TAM (Total Available Market) for shipping and space globally and across the solar system.

FUSION ENERGY SUPPLY-CHAIN REPORT



Based on the top-level fusion systems forecast, we break down the major subsystems and components expected to be used in laser, magnetic, stellarator, and hybrid fusion systems. We provide a map to materials that are now FOAK (First of a Kind), in pilot/specialty production, and COTS (Common Of The Shelf). Second, we forecast fusion power consumables such as tritium, capacitors, and other parts that must be serviced over the power plant's lifetime. We will examine their stage of development, timeline to volume production, and share-of-wallet (market size/TAM).

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