



Hydropower Potential

Facts | Benefits | Growth

Hydro Myths

“The country’s hydro resources are tapped out.”

“Hydropower is only available in a few places, like the Northwest.”

“Hydro is not cost-effective.”

“Hydropower development and river stewardship are not compatible.”

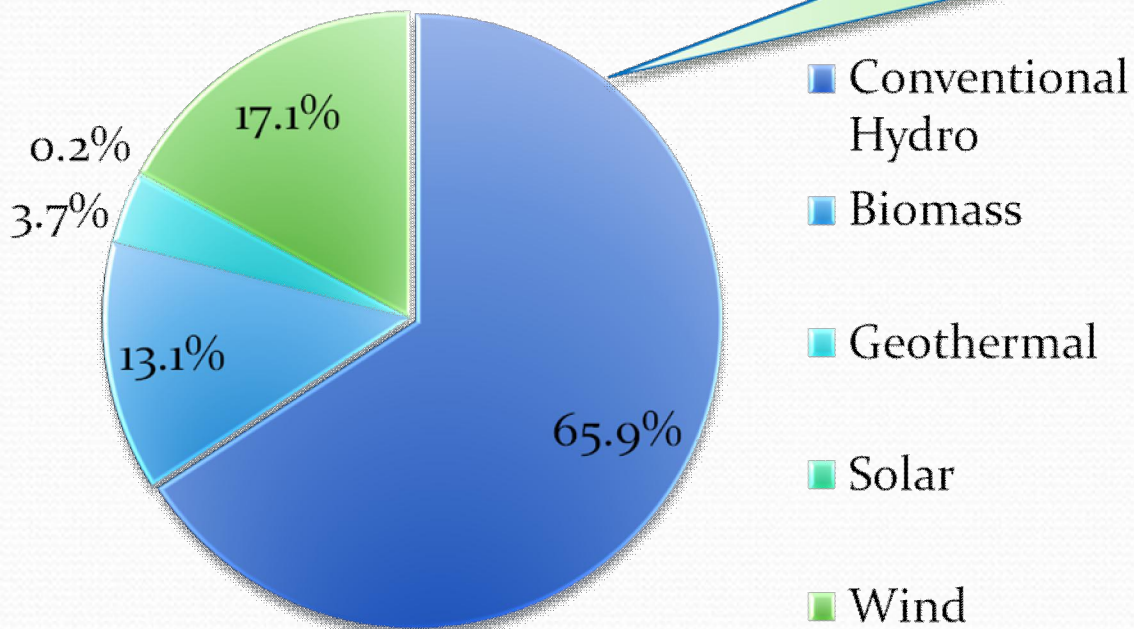
“U.S. hydro plants are all huge.”



The Facts

Availability

U.S. Renewable Power Generation, 2009



Hydropower accounted for 65.9 % of all renewable power generated in the U.S. last year.

Hydropower is the largest source of renewable electricity generation in the U.S. and made up 7% of overall power generation in 2009.

Source: EIA

Availability

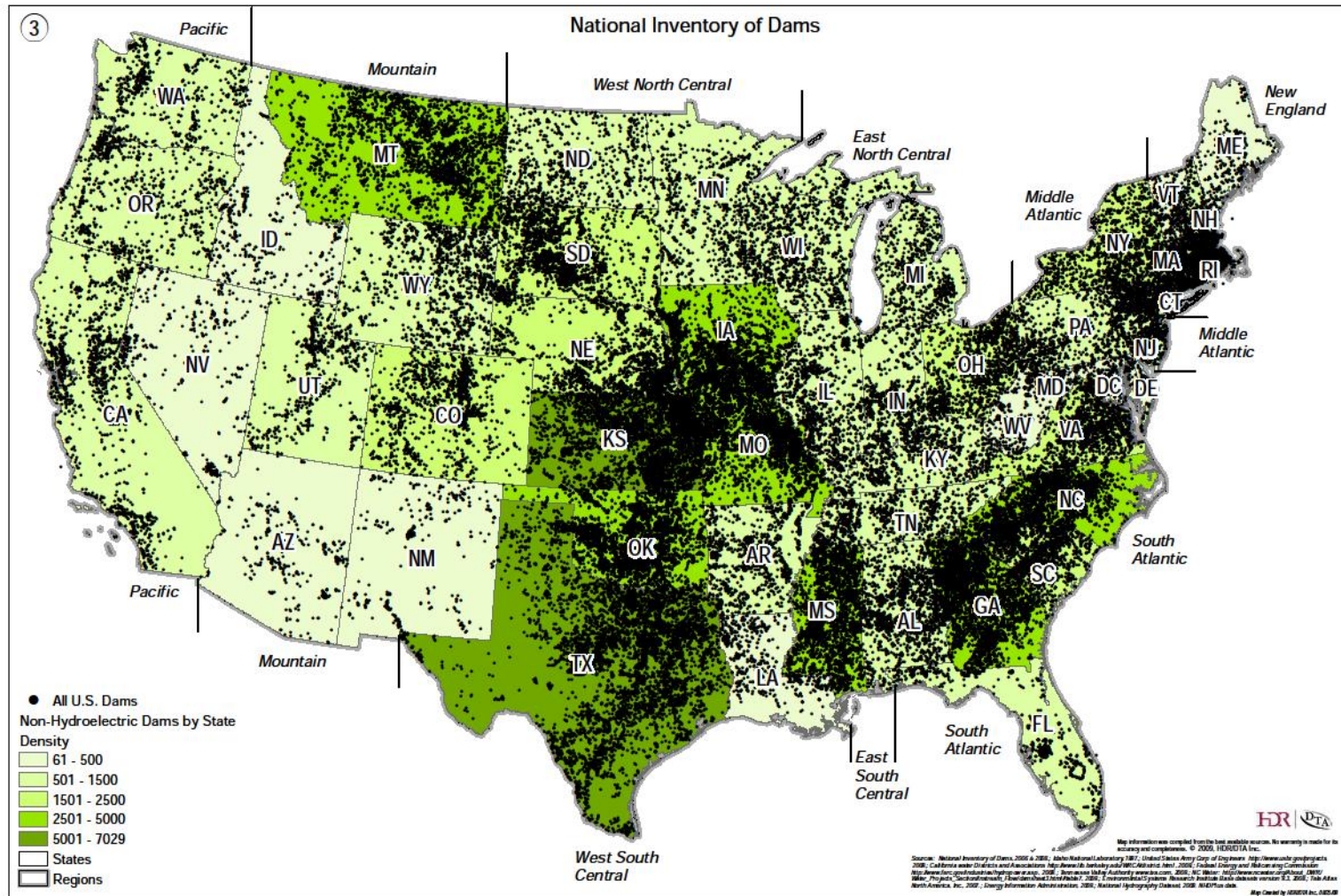
Top-ten hydropower generating states

Washington
Oregon
New York
California
Alabama
Idaho
Tennessee
Montana
Arizona
North Carolina

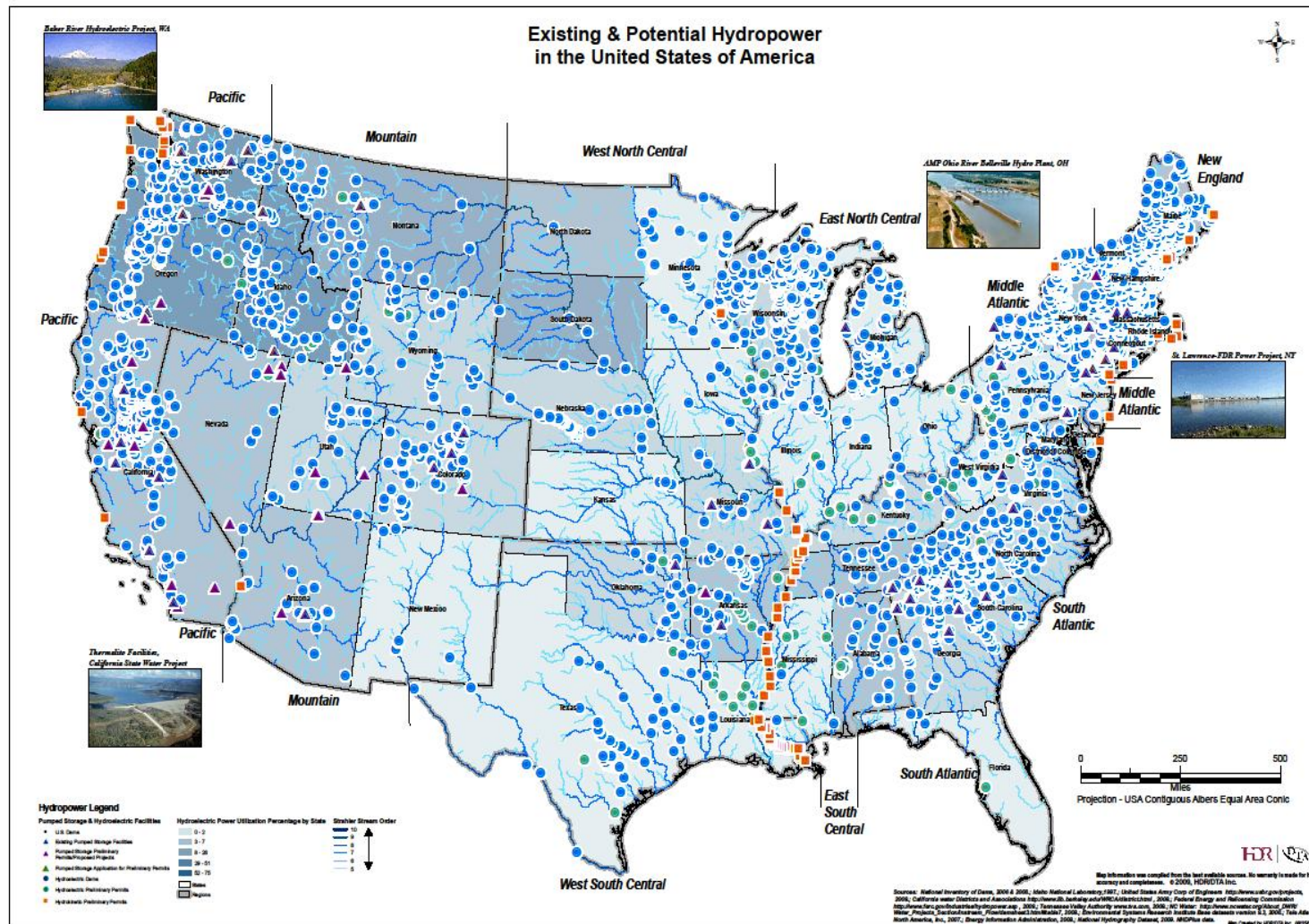
The industry employs up to 300,000 workers around the U.S., from project development to manufacturing to facilities operations and maintenance.

Hydropower is generated in every region and benefits every state.

80,000 Dams Across the U.S.



Existing & Potential Hydropower



Growth . . . Without New Dams

Using new technologies and maximizing existing infrastructure, we can significantly expand hydropower capacity without building new dams.

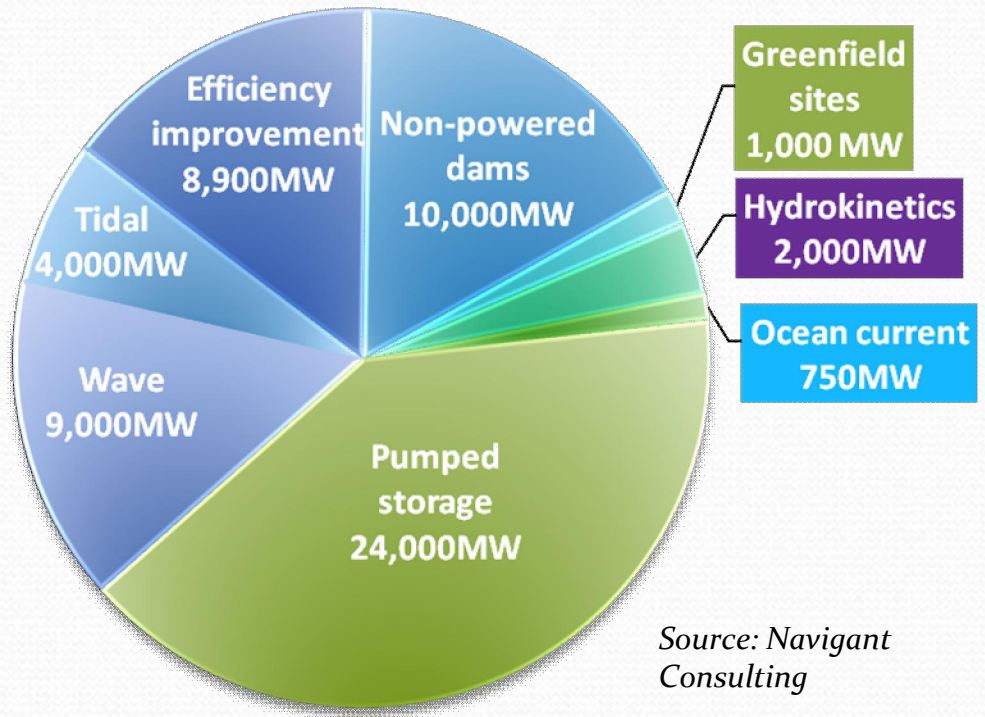
- ➡ Modernizing existing facilities
- ➡ Converting Non-Powered Dams
- ➡ Marine and Hydrokinetic Technologies
- ➡ Conduit Technology

Only 3% of the country's approximately 80,000 dams are currently generating electricity.

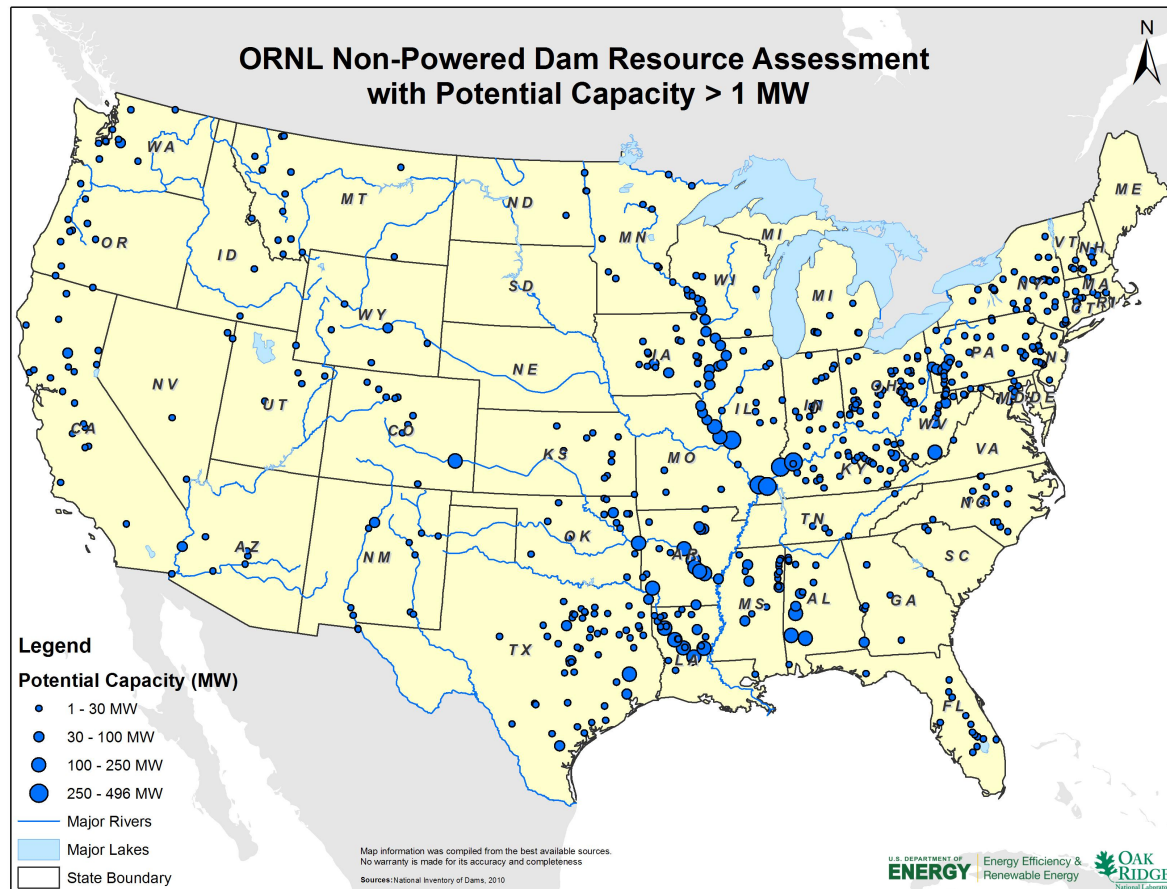
Future availability

With the right policies in place, **the U.S. could add 60,000 MW** of new hydro capacity by 2025, the vast majority of which can be created without adding new dams.

Hydro Capacity Growth by Technology



DOE/ORNL: Major Growth Opportunity



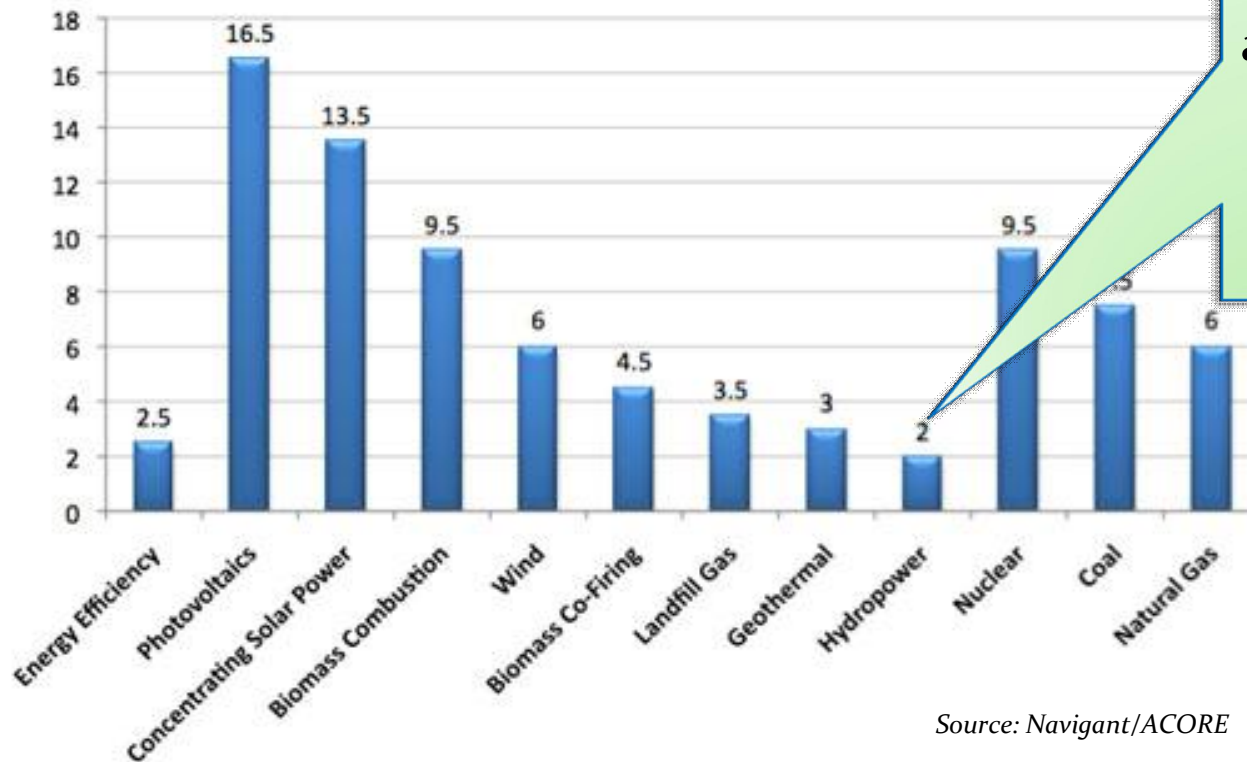
Hydropower Benefits



Affordable | Reliable | Sustainable

Affordable

LEVELIZED COST OF ELECTRICITY FOR VARIOUS POWER AND ENERGY EFFICIENCY OPTIONS, ¢/KWH



Source: Navigant/ACORE

Hydropower has the lowest levelized cost of electricity of any energy source – even energy efficiency

Clean and Sustainable

The hydropower industry is committed to better understanding and mitigating the impacts dams can have on local ecosystems and fish, with hundreds of millions of dollars invested each year in environmental enhancements at hydro facilities.

Using hydropower avoided approximately 196 million metric tons of U.S. carbon pollution in 2009 – equal to emissions from approximately 38 million cars.

Grid Reliability

Hydropower is a flexible and reliable electricity source. Hydropower's ability to dispatch power immediately makes it an essential back-up during major electricity disruptions.

*"[During the blackout,] one relatively large island remained in operation serving about 5,700 MW of demand, mostly in western New York, **anchored by the Niagara and St. Lawrence hydro plants.***

— US-Canada Power System Outage Task Force report, 2005

Grid support services include . . .

Frequency Control | Regulation | Load Following | Spinning Reserve | Supplemental Reserve

Energy Storage: Affordable & At Scale

Hydropower pumped storage is one of the few **large-scale, affordable means of storing and deploying electricity**.

➡ Absorbs excess generation at times of low demand, and releases it during peak demand periods.

➡ An excellent partner for intermittent renewable electricity sources.

The U.S. has more than 20GW of pumped storage capacity today, with facilities in every region of the country. Developers have proposed an additional 31GW.

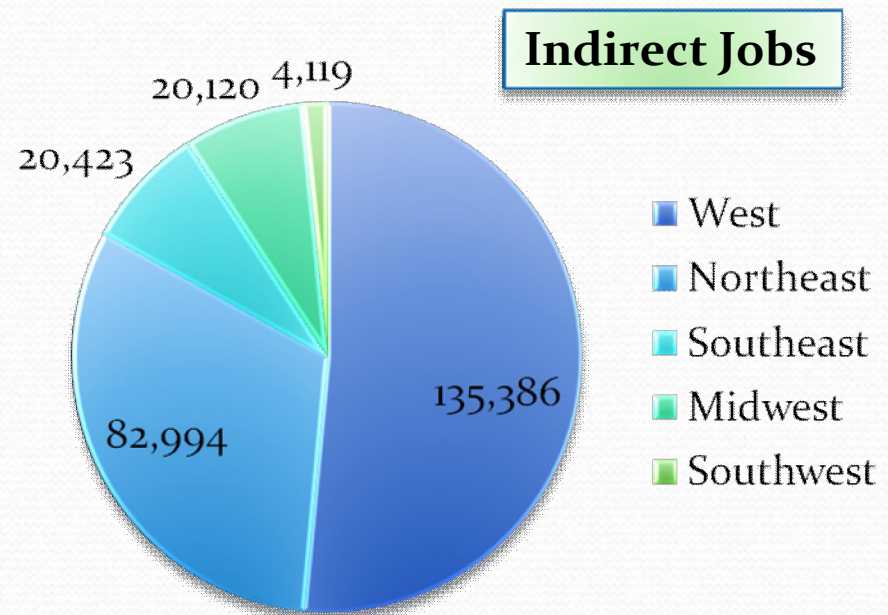
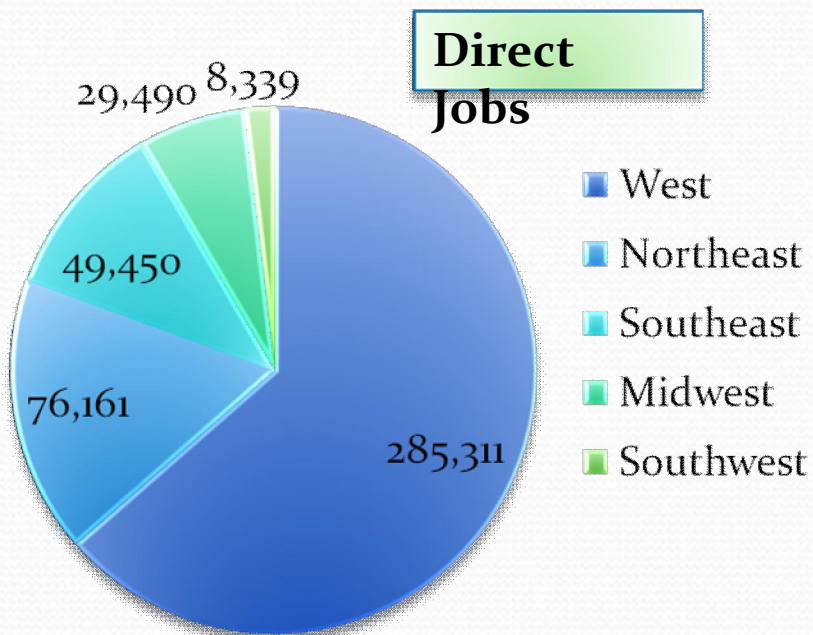
Hydropower Potential

A welder wearing a protective mask and gloves is working on a large, dark metal structure. Bright, orange-yellow sparks are flying from the welding point, creating a dynamic and industrial scene. The background is slightly blurred, showing more of the industrial environment.

New Capacity | Job Creation

1.4 Million Potential Jobs by 2025

Cumulative Job Creation by 2025 under a 25% RES



Job Creation Opportunities in Hydropower, Navigant Consulting, 2009

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