

# Hydropower's Place in a Clean Energy Future?

Prof. Gina S. Warren

05.11.18

---

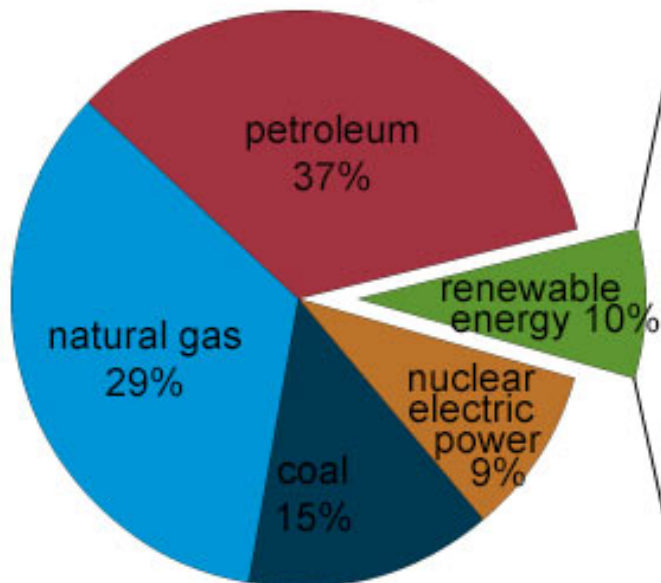
- Some background information
- Pending legislation
- Items to consider

# Overview

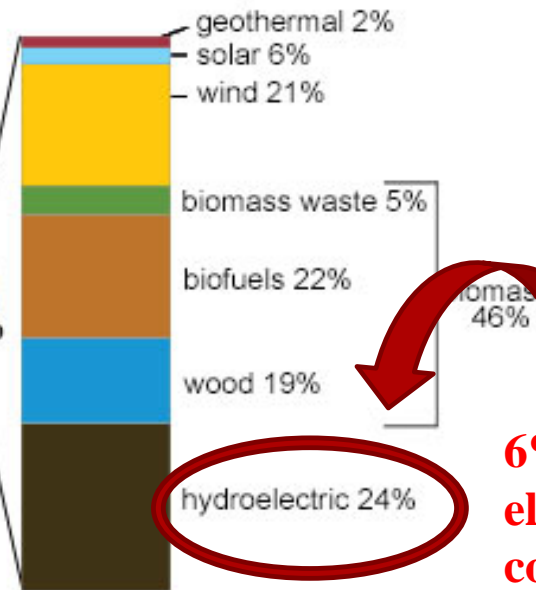
---

# U.S. energy consumption by energy source, 2016

Total = 97.4 quadrillion  
British thermal units (Btu)



Total = 10.2 quadrillion Btu



**6% total  
electricity  
consumption**

Note: Sum of components may not equal 100% because of independent rounding.

Source: U.S. Energy Information Administration, *Monthly Energy Review*, Table 1.3 and 10.1, April 2017, preliminary data



- Hydropower is only renewable that can provide baseload power, avoiding 190 million metric tons of CO2 emissions/yr
- DOE study shows U.S. hydropower production could grow by almost 50% from current levels by 2050 by:
  - Upgrading existing hydropower facilities
  - Adding generation capacity to existing non-powered dams and canals (only 3% of dams are currently powered)
  - Developing new hydropower facilities

## Background

---

- Hydropower is only renewable that can provide baseload power avoiding 190 million metric tons of CO2 emissions/yr
- DOE study shows U.S. hydropower production could grow by almost 50% from current levels by 2050 by:
  - Upgrading existing hydropower facilities
  - Adding generation capacity to existing non-powered dams and canals (only 3% of dams are currently powered)
  - Developing new hydropower facilities

## Background

---

- Relicensing workload – remain high well into the 2030s
- Between 2017 – 2030 – 480 older projects, which represent approximately 45% of FERC licensed projects, will begin the relicensing process
- Overall - FERC is currently processing nearly 5,000 licensing and exemption-related filings per year

## Relicensing Concerns

---

Facility	Time	Cost

# Timelines and Costs

---

Facility	Time	Cost
Wind/Solar	Within 1 year	<\$1 million

# Timelines and Costs

---



Facility	Time	Cost
Wind/Solar	Within 1 year	<\$1 million
Natural Gas	1-2 years	\$1-2 million

# Timelines and Costs

---

<b>Facility</b>	<b>Time</b>	<b>Cost</b>
Wind/Solar	Within 1 year	<\$1 million
Natural Gas	1-2 years	\$1-2 million
Hydropower	8-10 years	\$10s million

# Timelines and Costs

---

Table 1: Cases Requiring Other Agency Action

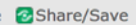
Project No.	Project Name	State	FERC NEPA Completed	Time Since NEPA Completion (Years)	Authorization Type Needed	Federal / State Agency Responsible
2086	Vermilion Valley	CA	5/3/2004	13	ESA / WQC	FWS / CA
2105	Upper N. Fork Feather	CA	11/10/2005	11.5	WQC	CA
2174	Portal	CA	4/27/2006	11.1	ESA / WQC	FWS / CA
11810	Augusta Canal	SC	9/22/2006	10.7	ESA	NMFS
2107	Poe	CA	3/29/2007	10.2	WQC	CA
1971	Hells Canyon	ID/OR	8/31/2007	9.8	ESA / WQC	NMFS and FWS / OR and ID
199	Santee Cooper	SC	10/26/2007	9.6	ESA	NMFS
67	Big Creek	CA	3/13/2009	8.2	ESA / WQC	FWS / CA
120	Big Creek 3	CA	3/13/2009	8.2	ESA / WQC	FWS / CA
2085	Mammoth Pool	CA	3/13/2009	8.2	ESA / WQC	FWS / CA
2175	Big Creek 1 and 2	CA	3/13/2009	8.2	ESA / WQC	FWS / CA
2088	South Feather	CA	6/4/2009	7.9	WQC	CA
2244	Packwood Lake	WA	7/1/2009	7.8	ESA	NMFS
803	DeSabra Centerville	CA	7/24/2009	7.8	ESA	NMFS
516	Saluda	SC	7/20/2010	6.8	ESA	NMFS
2106	McCloud-Pit	CA	2/25/2011	6.3	WQC	CA
2615	Brassua	ME	9/14/2011	5.7	WQC	ME
12965	Wickiup Dam	OR	11/2/2012	4.5	ESA / WQC	FWS / OR

Current Legislation

Examples: hr5, sres9, "health care"



MORE OPTIONS ▾

[Home](#) > [Legislation](#) > [115th Congress](#) > H.R.3043

## H.R.3043 - Hydropower Policy Modernization Act of 2017

115th Congress (2017-2018) | [Get alerts](#)

BILL

Hide Overview ✕

**Sponsor:** [Rep. McMorris Rodgers, Cathy \[R-WA-5\]](#) (Introduced 06/23/2017)

**Committees:** House - Energy and Commerce; Oversight and Government Reform | Senate - Energy and Natural Resources

**Committee Reports:** [H. Rept. 115-377](#)

**Latest Action:** Senate - 11/09/2017 Received in the Senate and Read twice and referred to the Committee on Energy and Natural Resources. ([All Actions](#))

**Roll Call Votes:** There have been [2 roll call votes](#)

Tracker:

Introduced **Passed House** Passed Senate To President Became Law

**More on This Bill**[Constitutional Authority Statement](#)[CBO Cost Estimates \[1\]](#)**Subject — Policy Area:**

Energy

[View subjects »](#)

Summary (2)

Text (4)

Actions (39)

Titles (4)

Amendments (4)

Cosponsors (0)

Committees (3)

Related Bills (4)

**Summary: H.R.3043 — 115th Congress (2017-2018)**[All Information](#) (Except Text)

Listen to this page

There are 2 summaries for H.R.3043. [Reported to House amended, Part I \(10/31/2017\)](#) ▾ [Bill summaries](#) are authored by [CRS](#).**Shown Here:****Reported to House amended, Part I (10/31/2017)**

Hydropower Policy Modernization Act of 2017

# Hydropower Policy

# Modernization Act of 2017

- Hydropower as renewable energy
- FERC as lead agency
- Expedited schedule
- Trial type hearings
- Federal considerations for climate?

## Some highlights

---

- Defines hydropower as a “renewable energy” under the Energy Policy Act of 2005
  - Also requires “not less than 15 percent in fiscal year 2017 and each fiscal year thereafter shall be renewable energy”

## Hydropower as “Renewable Energy”

---

- Designates FERC as the lead agency
  - Coordinate all licensing requirements
  - All federal and state agencies must submit recommendations to FERC
  - FERC holds a consolidated record

## FERC as Lead Agency

---

- Requires FERC to develop a timeline
  - That “ensures expeditious completion of all proceedings required under Federal and State law, to the extent practicable.”
  - Goal: 2 years?

## Expedited Schedule

---



- Entitles applicant to trial-type hearings before the ALJ at FERC
  - Hearings on conditions will no longer be conducted by the ALJ in the respective agency that proposed the condition

## Trial Type Hearings

---

statement demonstrating that the Federal agency gave equal consideration to the effects of the c

“(A) energy supply, distribution, cost, and use;

“(B) flood control;

“(C) navigation;

“(D) water supply; and

“(E) air quality and the preservation of other aspects of environmental quality.

# Federal Considerations for Climate??

---

- Includes air quality as factor (climate?)
- Consolidates the application process, creating stability and predictability
- Potentially streamlines timelines and process
  - money can be spent on upgrading facilities
- Forces the applicant, as well as agencies, to get their information together more expeditiously

## Benefits

---

- Comprehensive review of all powered and nonpowered dams
- Decrease duration of license or allow flexible licensing
- Require best available technology
- Increase local participation, local monitoring, and operator reporting

Things to consider ...

---

Gina S. Warren  
Associate Professor of Law  
UH Energy Fellow  
University of Houston Law Center  
[gswarren2@uh.edu](mailto:gswarren2@uh.edu)

Thank you!

---