

# An innovative, reliable, and affordable grid

## Relevant studies, reports, and analyses

Grid operators & reliability entities

Government

National laboratories

Independent consultants

Associations, institutions & NGOs

Academic publications

## Grid operators & reliability entities

#### 1. State of Reliability 2017

North American Electric Reliability Corporation June 2017

## 2. 2016 Comprehensive reliability plan

New York Independent System Operator April 2017

3. Evolving resource mix and system reliability

PJM Interconnection March 2017

### 4. Using renewables to operate a low-carbon grid

California Independent System Operator December 2016

### 5. 2016 Long-term reliability assessment

North American Electric Reliability Corporation December 2016

### 6. 2016 Wind integration study

Southwest Power Pool

### 7. Beyond 33% renewables: Grid integration policy for a low-carbon future

California Independent System Operator November 2015

## Government

### 1. Short-term energy outlook

U.S. Energy Information Administration June 2017



### Finding the ways that work

#### 2. Quadrennial energy review

U.S. Department of Energy January 2017

3. The power of transformation: Wind, sun, and the economics of flexible power systems

International Energy Agency February 2014

## National laboratories

1. Demonstration of essential reliability services by a 300 MW solar PV power plant

National Renewable Energy Laboratory April 2017

2. Eastern renewable generation integration study

National Renewable Energy Laboratory

August 2016

3. The role of advancements in solar PV efficiency, reliability, and coat

National Renewable Energy Laboratory

May 2016

4. Low carbon grid study: Analysis of a 50% emission reduction in California

National Renewable Energy Laboratory

January 2016

5. Renewable electricity futures: Operational analysis of the western interconnection at very high renewable penetrations

National Renewable Energy Laboratory

September 2015

6. Relevant studies for NERC's analysis of EPA's CPP

National Renewable Energy Laboratory

June 2015

7. Grid integration and the carrying capacity of the US grid to incorporate variable renewable energy

National Renewable Energy Laboratory

April 2015

8. Western wind and solar integration study phase 3 – frequency response and transient stability

National Renewable Energy Laboratory

December 2014

9. Meta-analysis of high penetration renewable energy scenarios

National Renewable Energy Laboratory

September 2013

10. Eastern frequency response study

National Renewable Energy Laboratory

May 2013

11. Renewable electricity future study, Volume 2: Renewable electricity generation and storage technologies

National Renewable Energy Laboratory

February 2012

12. Nebraska statewide wind integration study

National Renewable Energy Laboratory

March 2010

13. 20% Wind energy by 2030

National Renewable Energy Laboratory

July 2008



## Independent consultants

1. Reply comments of Michael Milligan, Ph. D. to FERC

Michael Milligan

October 2017

2. Electric System Reliability: No Clear Link to Coal and Nuclear

Rhodium Group

October 2017

3. Coal-Fired Electricity Generation in the United States and Future Outlook

M.J. Bradley & Associates, LLC

September 2017

4. Electricity markets, reliability and the evolving U.S. power system

The Analysis Group

June 2017

5. Advancing past "baseload" to a flexible grid

The Brattle Group

June 2017

6. Reliability risks due to coal retirement at ERCOT

The Brattle Group

December 2016

7. Integrating renewable energy into the electricity grid

The Brattle Group

June 2015

8. Minnesota renewable energy integration and transmission study

General Electric

October 2014

9. PJM renewable integration study

General Electric

March 2014

## Associations, institutions & NGOs

1. The state of wholesale power markets: What's wrong with proposed changes in Eastern RTOs?

**Energy Innovation** 

June 2017

2. Secretary Perry, we have some questions too

**Energy Innovation** 

May 2017

3. Energy fact check: The impact of renewables on electricity markets and reliability

American Council on Renewable Energy

May 2017

4. Changing the power grid for the better

Advanced Energy Economy Institute

May 2017

5. Renewable energy builds a more reliable and resilient electricity mix

American Wind Energy Association

May 2017

6. Solar and renewables benefit the grid and the US economy

Solar Energy Industries Association

January 2016

7. Renewables and reliability fact sheet: Grid management solutions to support CA's clean energy future

Union of Concerned Scientists

March 2015



# Academic publications

 Abstracts of 25 Peer-Reviewed Published Journal Articles Supporting the Result That the Electric Grid can Stay Stable with Electricity Provided by 100% or Near-100% Renewable Energy

Stanford University August 2017

2. Can coal make a comeback?

Columbia Center on Global Energy Policy April 2017

3. Potential for concentrating solar power to provide baseload and dispatchable power Nature Climate Change

June 2014

 Managing variable energy resources to increase renewable electricity's contribution to the grid Scott Institute for Energy Innovation an Carnegie Mellon University May 2013

Supplying baseload power and reducing transmission requirements by interconnecting wind farms
 Journal of Applied Meteorology and Climatology
 February 2007