

DOE Water-Energy Nexus Overview



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August 20, 2014



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U.S. Drought Monitor CONUS

August 12, 2014

(Released Thursday, Aug. 14, 2014)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	52.81	47.19	33.61	22.03	10.24	3.79
Last Week 8/5/2014	52.44	47.56	33.94	22.19	10.19	3.84
3 Months Ago 5/13/2014	51.21	48.79	38.08	28.04	14.00	4.46
Start of Calendar Year 12/31/2013	48.24	51.76	30.95	16.67	3.96	0.37
Start of Water Year 10/1/2013	39.57	60.43	41.21	20.70	3.06	0.29
One Year Ago 8/13/2013	42.70	57.30	45.26	31.57	11.77	2.03

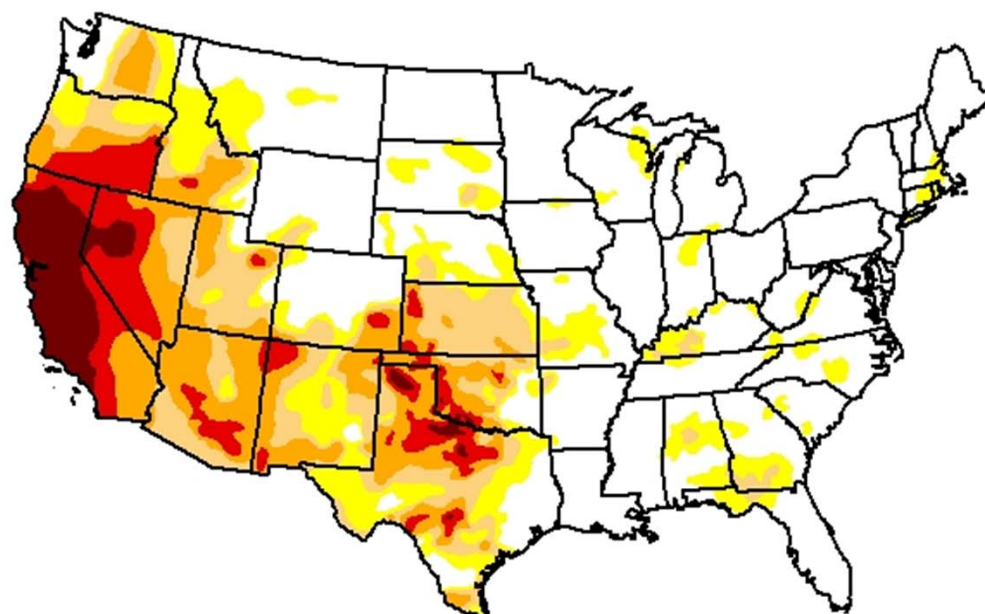
Intensity:

 D0 Abnormally Dry	 D3 Extreme Drought
 D1 Moderate Drought	 D4 Exceptional Drought
 D2 Severe Drought	

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author(s):

Richard Tinker
CPC/NOAA/NWS/NCEP



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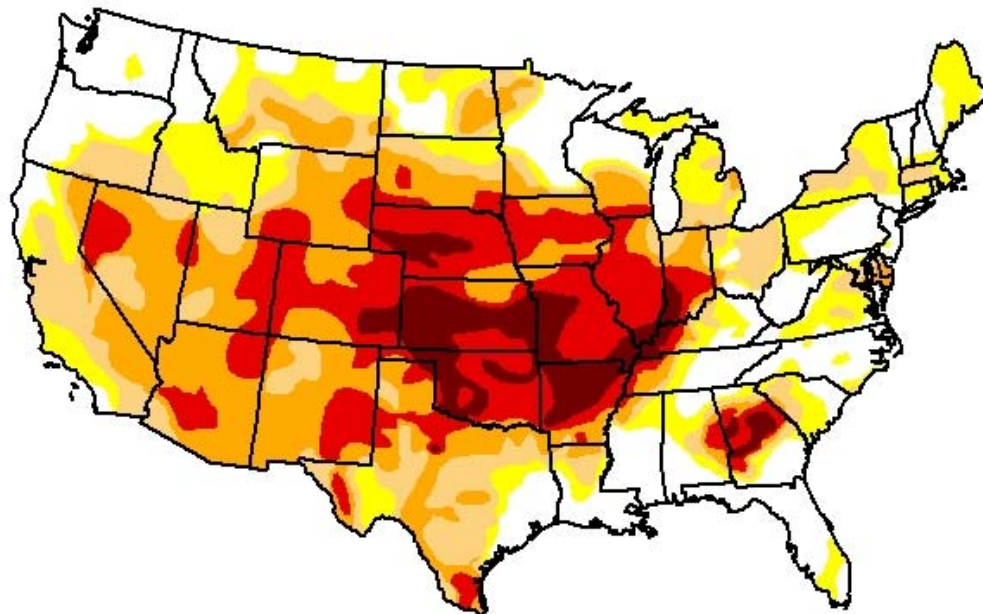
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<http://droughtmonitor.unl.edu/>

U.S. Drought Monitor CONUS

August 14, 2012
(Released Thursday, Aug. 16, 2012)
Valid 7 a.m. EST



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	22.32	77.68	61.77	45.54	23.68	6.26
Last Week 8/7/2012	21.86	78.14	62.46	46.01	24.14	4.21
3 Months Ago 5/15/2012	45.21	54.79	33.64	18.39	5.71	1.02
Start of Calendar Year 1/3/2012	50.41	49.59	31.90	18.83	10.18	3.32
Start of Water Year 9/27/2011	56.45	43.55	29.13	23.44	17.80	11.37
One Year Ago 8/16/2011	55.14	44.86	31.00	23.43	17.37	10.83

Intensity:

D0 Abnormally Dry	D3 Extreme Drought
D1 Moderate Drought	D4 Exceptional Drought
D2 Severe Drought	

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author(s):

Michael Brewer
NCDC/NOAA



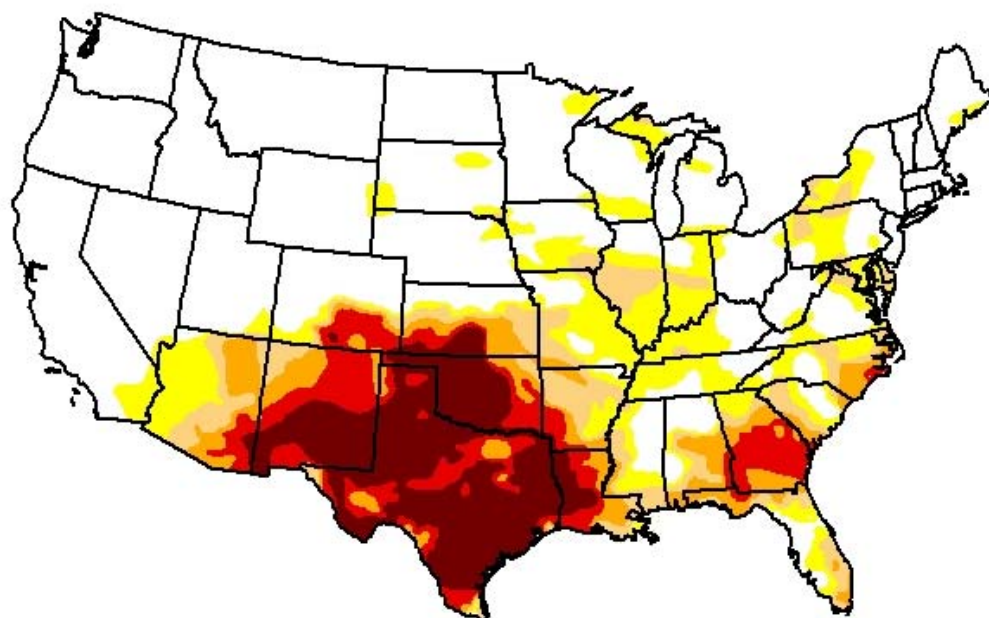
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U.S. Drought Monitor CONUS

August 16, 2011
(Released Thursday, Aug. 18, 2011)
Valid 7 a.m. EST



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	55.14	44.86	31.00	23.43	17.37	10.83
Last Week 8/9/2011	55.01	44.99	32.86	24.74	18.48	11.46
3 Months Ago 5/17/2011	67.69	32.31	26.35	20.68	13.18	6.04
Start of Calendar Year 1/4/2011	60.50	39.50	21.74	8.50	2.60	0.00
Start of Water Year 9/28/2010	60.05	39.95	13.16	3.09	0.30	0.00
One Year Ago 8/17/2010	72.40	27.60	8.46	1.66	0.14	0.00

Intensity:

D0 Abnormally Dry	D3 Extreme Drought
D1 Moderate Drought	D4 Exceptional Drought
D2 Severe Drought	

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author(s):

Laura Edwards
Western Regional Climate Center



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<http://droughtmonitor.unl.edu/>

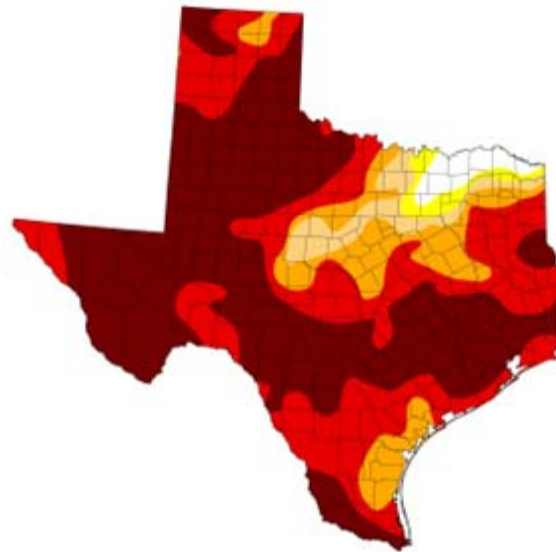
Could Water Conservation in the Thermoelectric Power Sector Have Helped to Mitigate Agricultural Impacts of Drought?

U.S. Drought Monitor Texas

May 31, 2011
Valid 7 a.m. EST

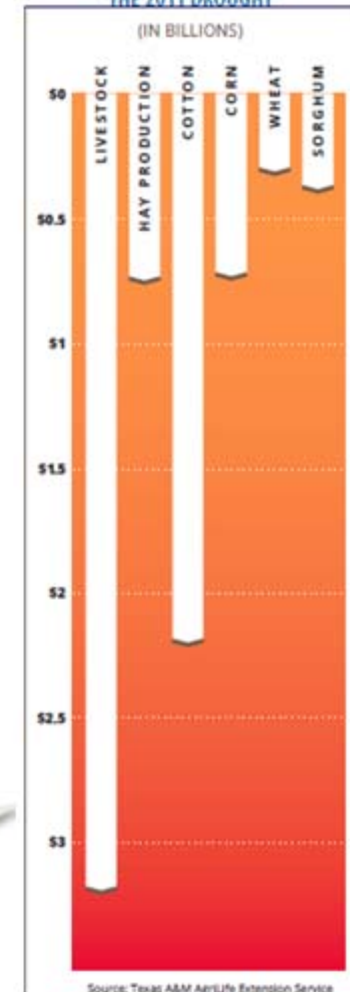
	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	2.25	97.75	96.07	91.89	81.09	50.65
Last Week (05/24/2011 map)	2.30	97.70	95.77	91.97	78.49	43.97
3 Months Ago (03/01/2011 map)	4.99	95.01	72.91	46.34	12.72	0.00
Start of Calendar Year (12/29/2010 map)	7.89	92.11	69.43	37.46	9.59	0.00
Start of Water Year (09/29/2010 map)	75.57	24.43	2.43	0.99	0.00	0.00
One Year Ago (05/25/2010 map)	86.10	13.90	5.26	0.00	0.00	0.00

Intensity:



Agricultural loss of nearly **\$7.6 billion** due to 2011 drought resulted in pressure applied against all industries

FINAL LOSSES DUE TO THE 2011 DROUGHT



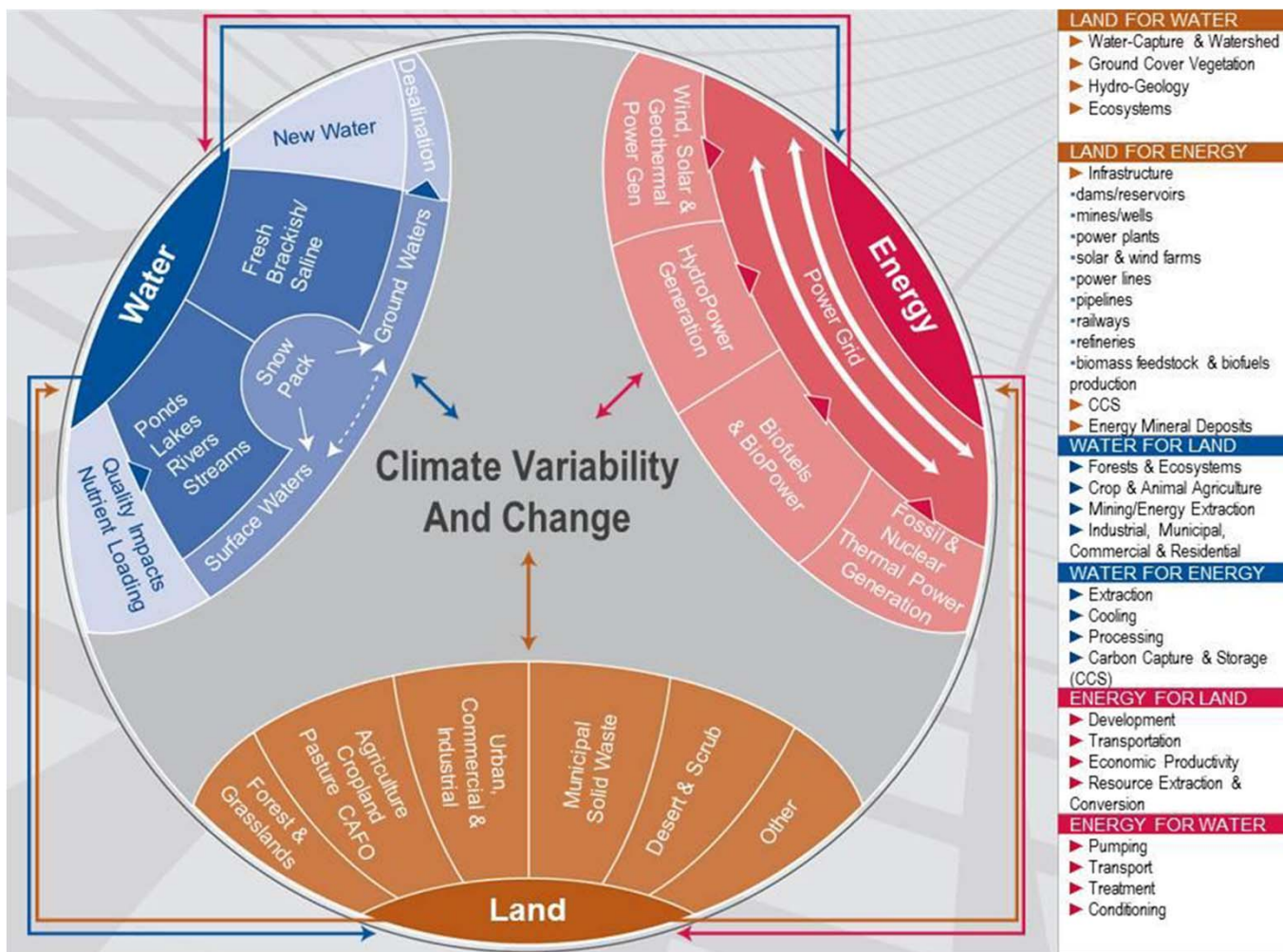
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Courtesy: NETL

Drivers – Water/Energy/Land

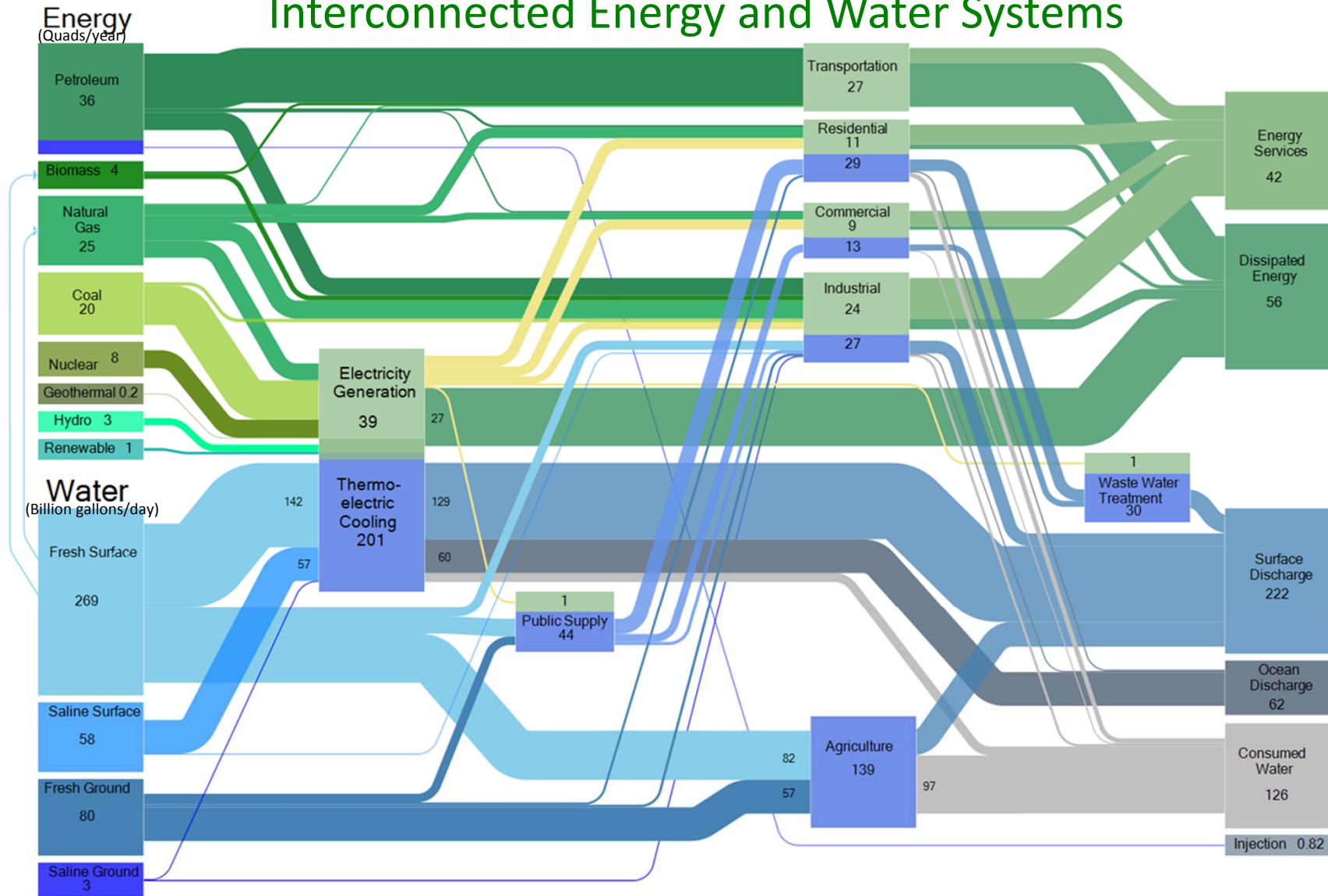
Competing Demands



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Sankey Diagram: Contiguous U.S. Interconnected Energy and Water Systems



Collaboration Opportunities

Many current and potential partners in the water-energy arena.

- Federal agencies have important activities at the water-energy nexus, as do regional, state, tribal, and local authorities
- Non-Federal Government
 - private companies
 - national non-governmental organizations (NGOs)
 - international governments
 - universities
 - and municipal facilities
- Working with NETL to develop strategic R&D initiatives that improve the efficiency of water use by the power industry



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Water-Energy Nexus Initiative

Strategic Pillars / Challenges

1. Optimize the freshwater efficiency of energy production, electricity generation, and end use systems
2. Optimize the energy efficiency of water management, treatment, distribution, and end use systems
3. Enhance the reliability and resilience of energy and water systems
4. Increase safe and productive use of nontraditional water sources
5. Promote responsible energy operations with respect to water quality, ecosystem, and seismic impacts
6. Exploit productive synergies among water and energy systems

<http://www.energy.gov/sites/prod/files/2014/07/f17/Water%20Energy%20Nexus%20Full%20Report%20July%202014.pdf>

Questions?



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