

Descriptive Analysis

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1 Things to look up

- When did placed in service switch to start construction?

2 Pre-2005 Credits

- Energy Policy Act of 1992
 - made 10% ITC for solar and geothermal permanent
 - first enactment of PTC for electricity generated using wind or closed-loop biomass
- Working Families Tax Relief Act of 2004
 - extended PTC through December 31, 2005; at this point PTC for poultry waste, too
- American Jobs Creation Act of 2004
 - Added open-loop biomass (including agricultural livestock waste), geothermal, solar, small irrigation power, and municipal solid waste (landfill gas and trash combustion); but limited to five-year PTC period
 - Open-loop biomass, small irrigation power and municipal solid waste received only half credit
 - Introduced PTC for refined coal, with rate of \$4.375 per ton on qualifying serviced placed in service before January 1, 2009

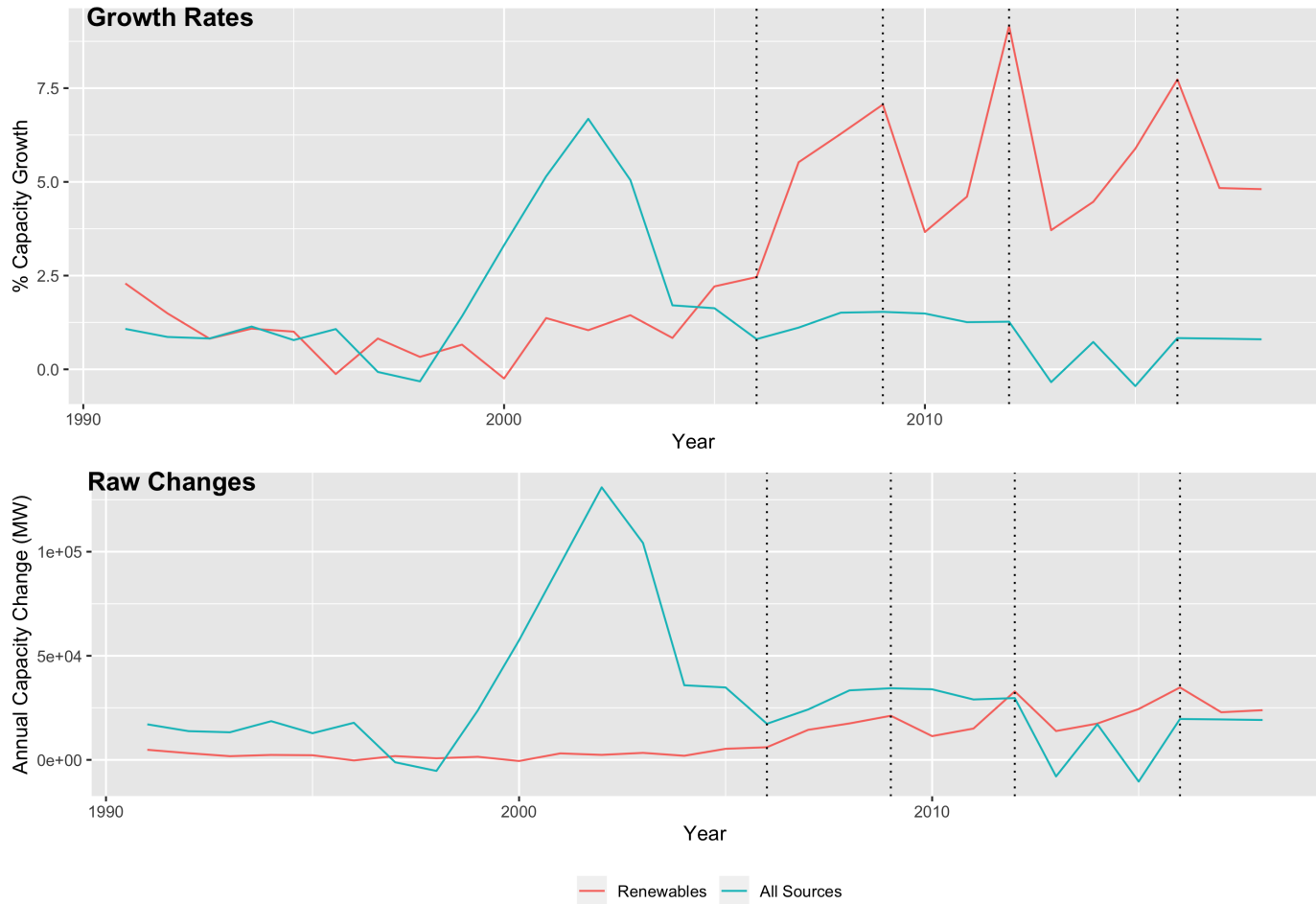
3 Relevant Policies 2005–Present

- After December 31, 2005, PTC for solar expires
- Energy Policy Act of 2005 (8/8/05)
 - increased solar ITC from 10% to 30% for 2006 and 2007
 - 30% ITC for fuel cell power plants,
 - 10% for stationary microturbine power plants placed in service during 2006 and 2007
 - extended PTC for all facilities except solar energy and refined coal for two years, through 2007
 - added PTC for hydropower (half-credit) and Indian Coal (seven-year period, \$1.50 per ton for first four years, then \$2.00 per ton for last three years)
 - extended PTC period from 5 to 10 years for all qualifying facilities (other than Indian Coal) for all qualifying facilities placed in service after August 8, 2005
- Tax Relief and Health Care Act of 2006 (12/20/06)
 - extended ITC through 2008
 - extended PTC through 2008 for all technologies but solar, refined coal and Indian coal through 2008
- Emergency Economic Stabilization Act of 2008 (10/3/08)
 - extended credits for solar, fuel cells and microturbines through December 31, 2016

- provided 10% credit for geothermal heat pump property
- 30% credit for qualified small wind energy property
- 10% credit for combined heat and power (CHP)
- ITC all with placed-in-service deadline of December 31, 2016
- PTC for wind and refined coal extended through 2009
- PTC for closed-loop and open-loop biomass, geothermal, small irrigation, municipal solid waste, and hydropower extended two years through 2010
- added PTC for marine and hydrokinetic renewable energy; and new credit for steel industry fuel
- American Recovery and Reinvestment Act of 2009 (2/17/09)
 - extended PTC for wind through 2012 and for other technologies through 2013
- allowed ITC or one-time grant in lieu of PTC for property placed in service or start construction in 2009 and 2010 itemize
- Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010
 - extended grant program for one year (through 2011)
- American Taxpayer Relief Act of 2012 (1/2/13)
 - extended PTC for wind through 2013,
 - changed placed-in-service PTC requirement to start construction
- Tax Increase Prevention Act of 2014 (12/19/14)
 - PTC and ITC in lieu of PTC option retroactively extended through 2014
- Consolidated Appropriations Act, 2016 (12/18/15)
 - extended the 30% credit rate for solar electric or heating property (but not fiber-optic) through 2019
 - Termination date changed from placed-in-service deadline to construction start date
 - Credit set at 26% for construction beginning in 2020; 22% for 2021
 - To qualify for a rate in excess of 10%, property must be placed in service by December 31, 2023
 - extended PTC expiration date for nonwind facilities through end of 2016
 - extended ITC in lieu of PTC option through 2016
 - extended PTC for Indian Coal through 2016
 - removed placed in service limit for Indian Coal
 - extended PTC for wind through 2019 with reduced rates each year
 - A permanent 10% ITC will remain for solar and geothermal
- Bipartisan Budget Act of 2018 (2/9/18)
 - retroactively extended PTC for nonwind and Indian Coal for tax year 2017
 - extended ITC for five years for fiber-optic solar, fuels cells, small wind, microturbine, CHP, geothermal heat pump property
 - For property eligible for 30% credit rate through 2019, credit rate reduced according to solar reduction schedule
 - All termination dates changed to construction start deadlines

4 EIA Annual Capacity Data

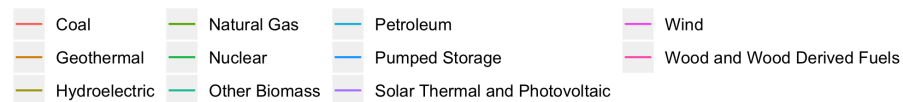
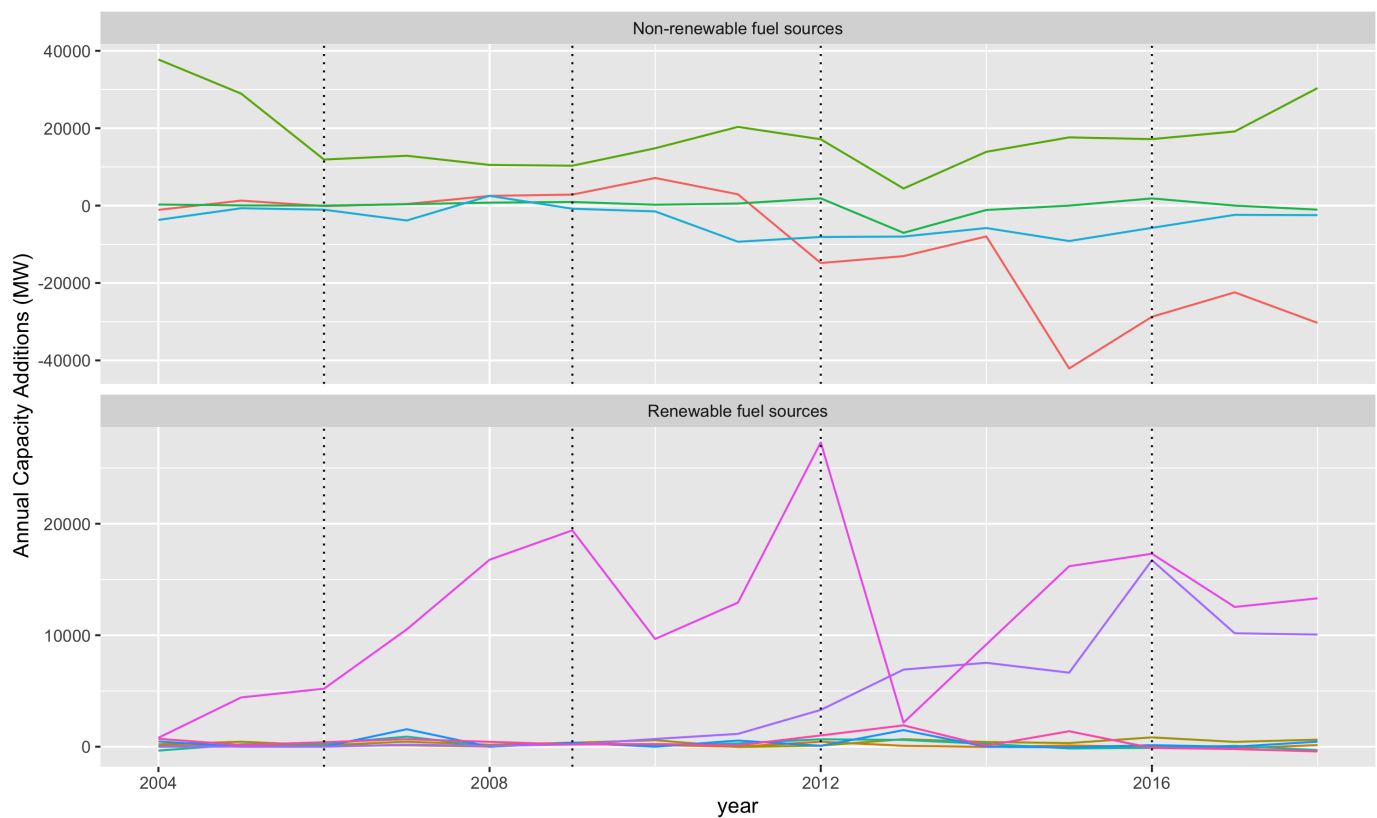
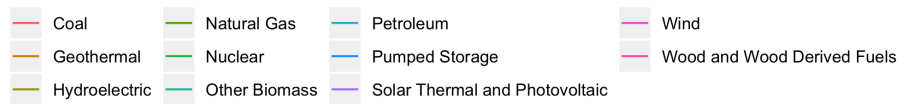
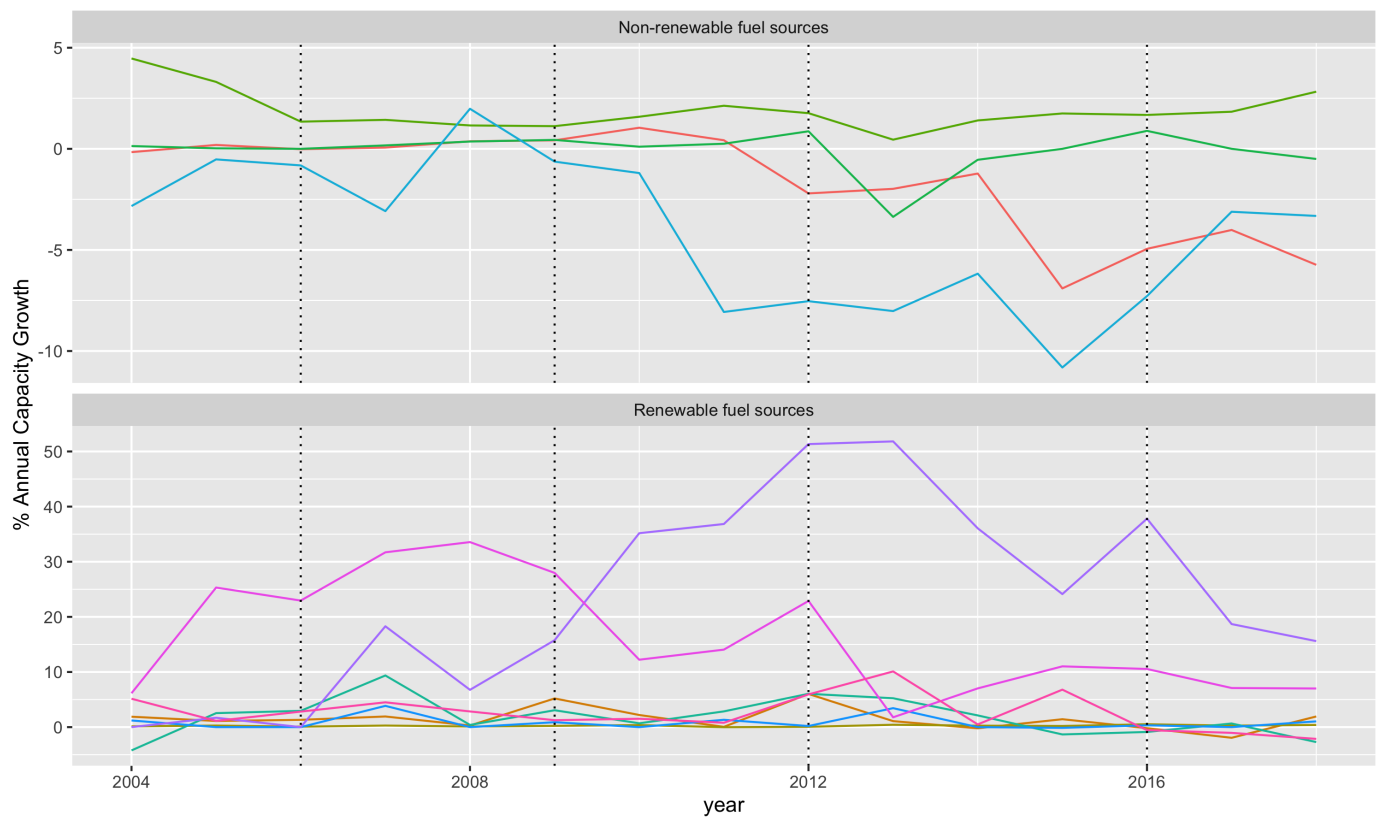
4.1 Aggregates

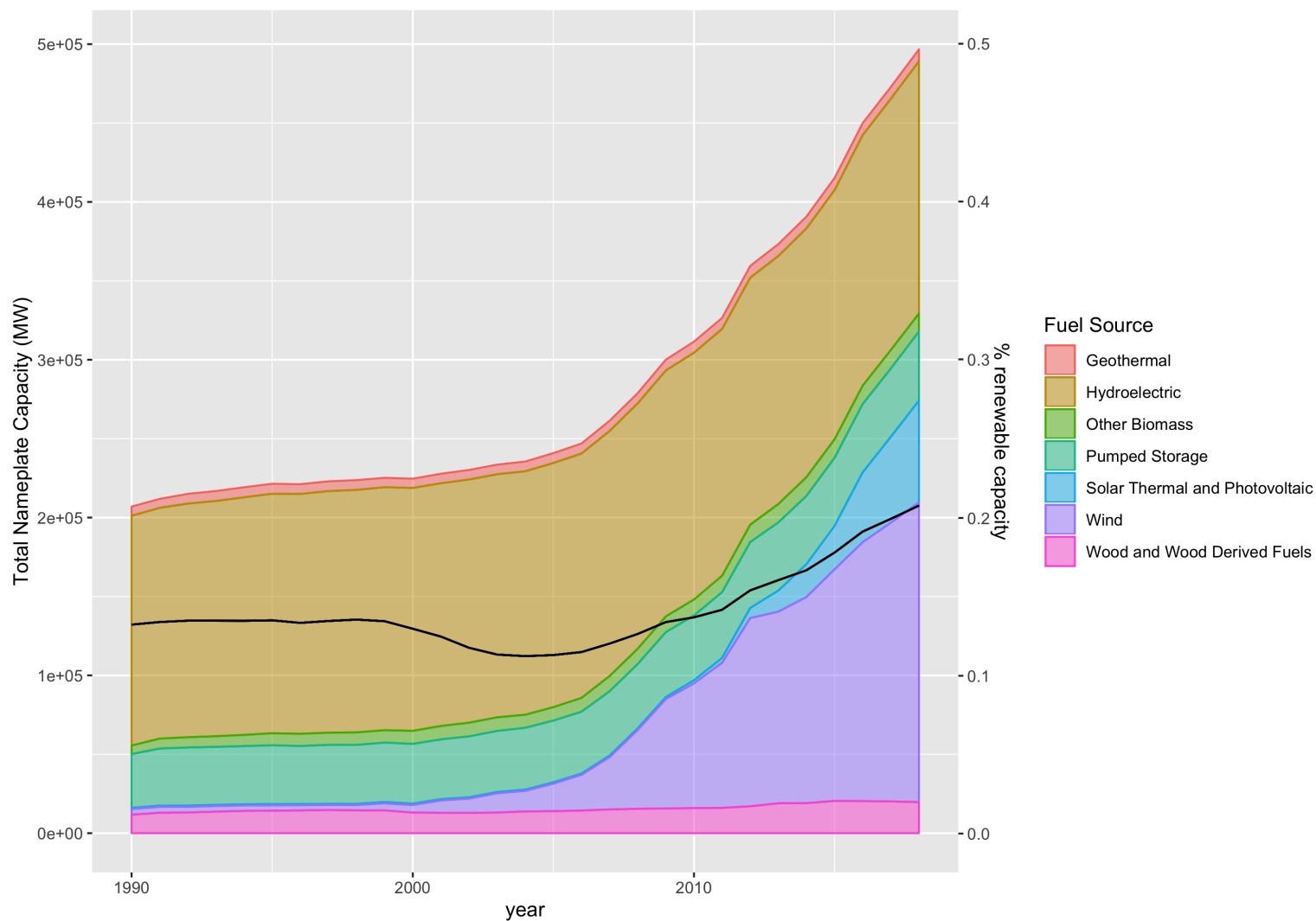


Vertical lines indicate the following policy changes:

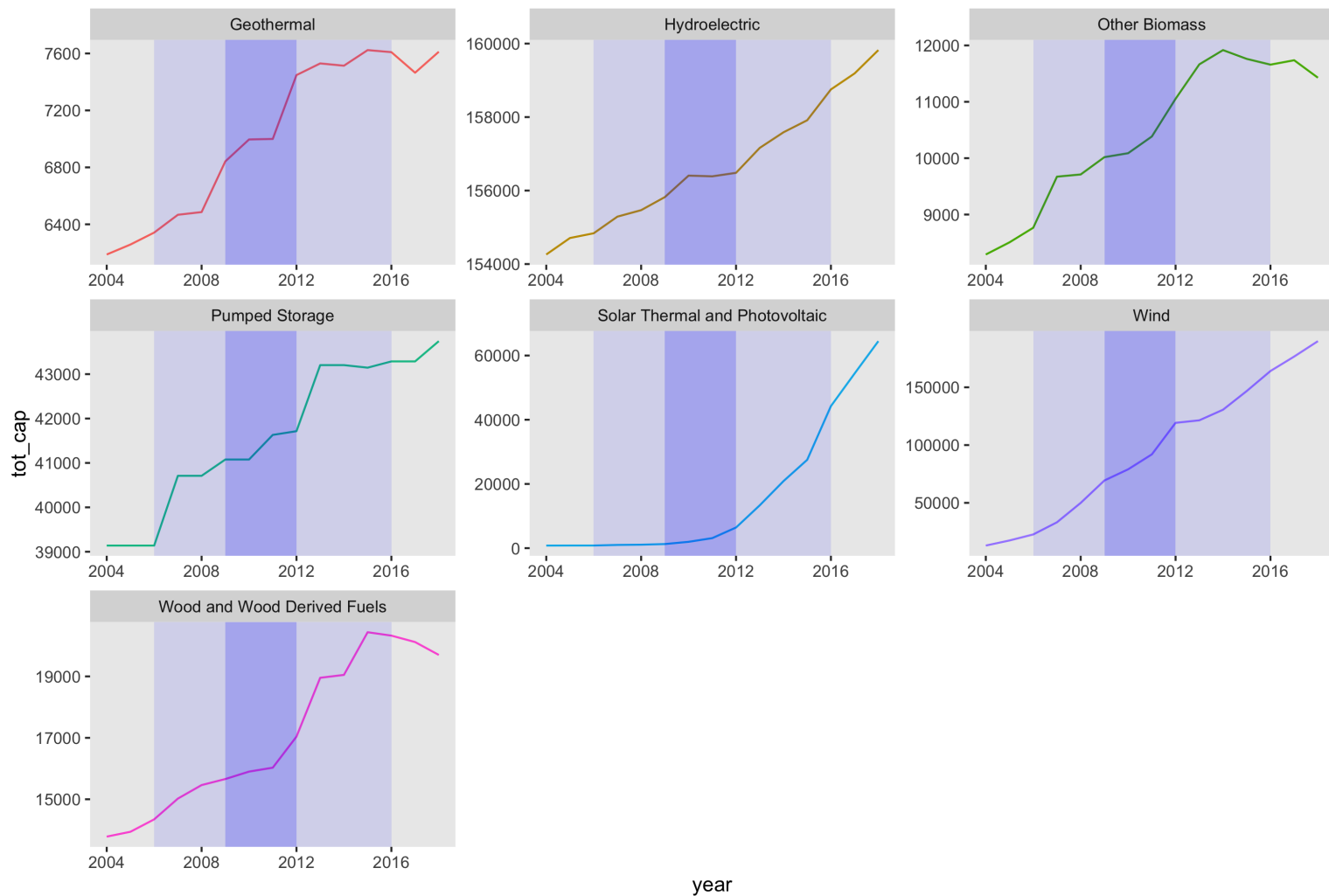
- 2006: First year of 30% ITC, 10-year PTC
- 2009-2012: Loan grants in lieu of ITC; ITC or loan grant in lieu of PTC
- 2016: Original end of ITC

There appear to be spikes in renewable capacity additions that align with these programs.

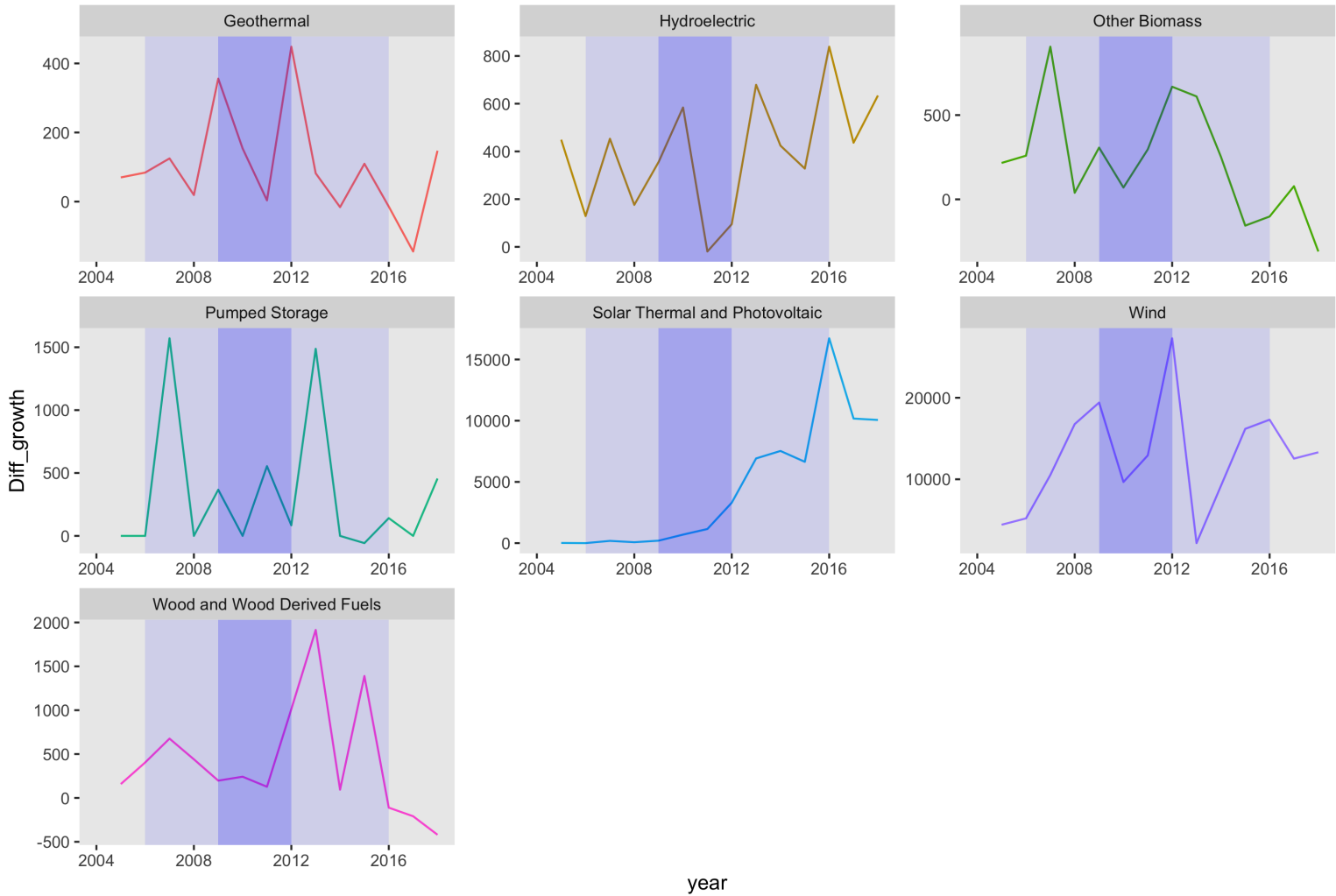




U.S. Renewable Energy Capacity (MW), 2005-2018



Annual Capacity Additions (MW), 2005-2018



5 By Region

