An Austin Energy Plan: Efficiency First, Mix our Resources and Control Our Coal Addiction

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Austin Energy Plan

- Points on Which We Can Agree
- A Process for Moving Forward
- Efficiency First
- Mix our Renewable Resources
- Control our Coal Addiction
- The Reed Flexible Plan: Comparisons with AE Plan and Pace Get out of Fayette Plan

Points on which Task Force members (probably) agree

- Cheaper better than more expensive, while meeting Renewable and Carbon goals;
- Efficiency and permanent demand-side reductions are in our own best interests
- We don't want to put all our eggs in one basket or one technology;
- Good to have some control of our resources, but also need to take advantage of and to rely on market;
- Because change occurring so rapidly, long-term PPAs are difficult and may not be in best interests;
- Our continued use of coal is problematic given likely costs and pollution, but it would be better if we had control over how we use it or don't.

We are all concerned by this bill impact "Electric Cost Outlook" ...but if we use less electricity impact is less

Item	2010	2011	2012	2013	2014	2015	2015-2020
Transmission Rider	Postponed -- around 4%?	TDB	TBD	TBD	TBD	TBD	TBD
Rate Case			Proposed	TDB	TDB	TBD	TBD
Fuel Adjustment	5%	TBD	TBD	TBD	TBD	TBD	TBD
Webberville-Solar Fuel Adjustment		1.5%	TBD	TBD	TBD	TBD	TBD
Biomass (2012) Fuel Charge			5%	TBD	TBD	TBD	TBD
AE Resource Gen. Plan -- Guestimated	(.9)%	4.9%	1.1%	(1.1)	1.9%	5.7%	7.1%

A Process for Moving Forward

- Give recommendations on efficiency first plan -- ASK AE to come up with more aggressive demand side plan;
- Ask AE and City to take advantage of stimulus, beyond weatherization and EE block grant
- Ask AE and City to look at HB 1937 Financing District
- Call for mid-term review of plan before 2012 rate case
- Have public process for adding new generation units -- should be some comparison with ability to use market to get similar resource at cheaper cost;
- Ask AE to come back with Fayette Reduction Plan and work their electric dispatch in concert with Ozone reduction plan and CO2 Plan

Efficiency First: The Reed Plan

- Look at each sector independently and decide: Can we raise the cost cap of rebates, eligibility? Are we using the best financial mechanism between rebates, incentives, loans, etc? Can you do both rebates and loans?
- Weatherization: Is 150% of poverty the right level? Why not increase to 200% of poverty and make stimulus change permanent? Or more? Why does Austin Energy not allow those whose homes are of certain value participate?
- If there are some unable to pay now, why not help them so they will pay in future.

More on efficiency: Middle-income

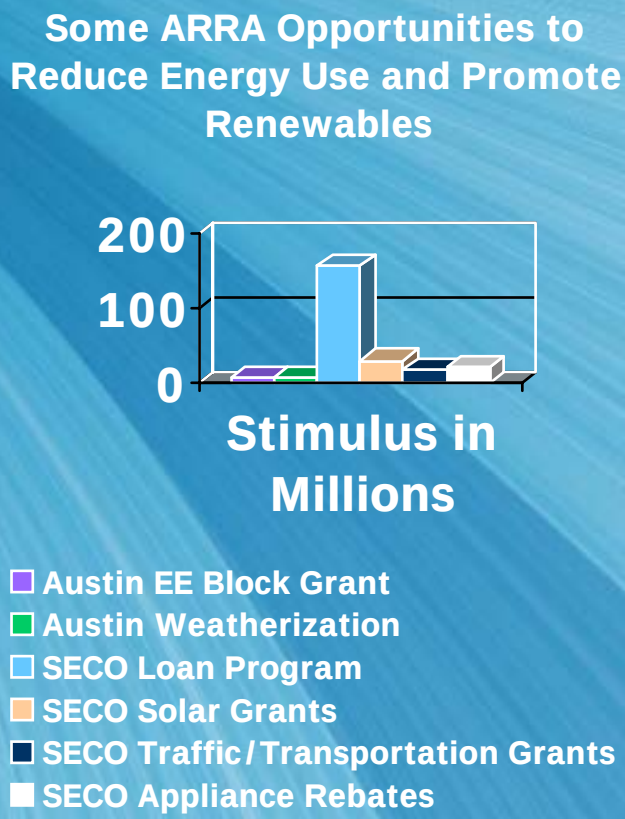
- Cyrus has medium income, an old, inefficient high-value home
- AE can give me a rebate to fix up my home for various appliance, a loan through Velocity, but not both. Big bother -- plus I have to rely on several companies telling me what I should do all of whom have different criteria.
- Explore other financing mechanism and have AE serve as one-stop energy audit shopping;
- HB 1937 style on property tax, or utility-bill vs. traditional low-interest loan
- Solar could be rolled into bill where appropriate

Efficiency for bigger folks

- Explore raising cap in certain instances, projects
- Explore raising payback periods and cost-effectiveness test
- Explore financing mechanisms beyond rebates
- Explore leasing options for solar on roofs
- Explore additional CHP, Geothermal Heat Pumps

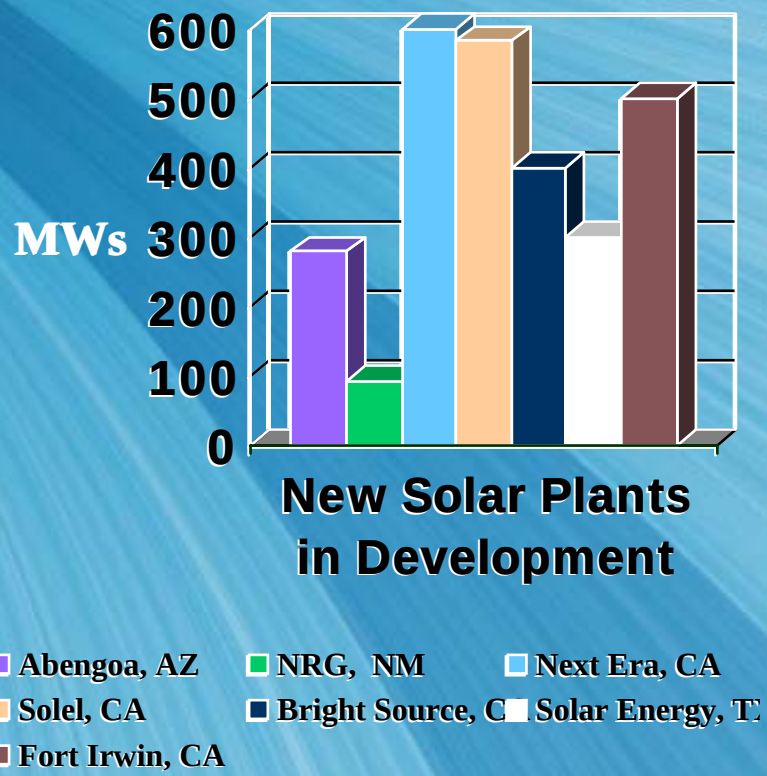
Take advantage of all stimulus funds and make it part of AE plan

- Energy Efficiency Block Grant
- TDHCA Direct Weatherization
- Potential to apply to SECO for $30 million in on-site renewable grants, $20 million in rebates for appliances; $158 million in loans for public building efficiency and solar; and $18 in transportation efficiencies, including LED lights
- Also smart grid, direct grants and loans for renewable energy



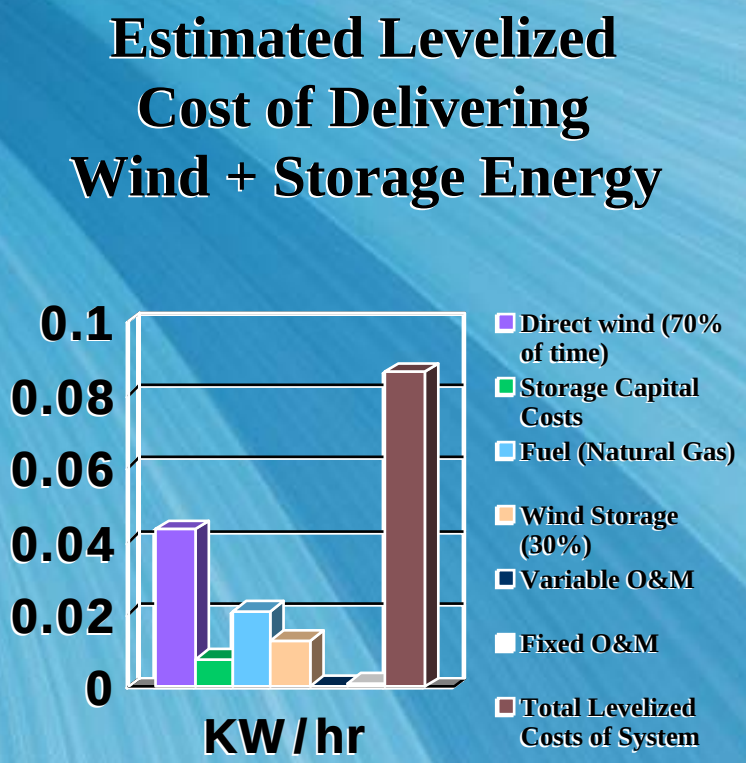
Don’t put all eggs in one basket: Varied Renewable Portfolio

- Plan seems to focus on solar PV centralized
- Don’t ignore residential and commercial PV -- low-interest loans vs. City ownership vs. feed-in tariffs vs. rebates -- 3,000 MW potential surely we can get at least 50 to 100 MW in next 10 years
- Don’t ignore CSP potential, particularly CSP with Storage and/or Hybrid CSP with Gas, especially if in concert with other utilities to get cost-of-scale
- CSP plants are up and running and new ones are on book (see Chart to Right)



Storage Capability of Renewables Needs to Be Considered

- We don't need "Base Power" -- -- but we do need to have power when we need it;
- Local batteries and Smart Grid
- CAES -- Compressed Air Energy Storage already in use, though not for wind -- P & G and Luminant have large-scale projects in development
- Solar large-scale storage and/or gas hybrid
- My guess on Cost for CAES to right --assuming LBJ costs and using direct wind 70% of time
- Plan should aim for energy storage -- if cost-effective



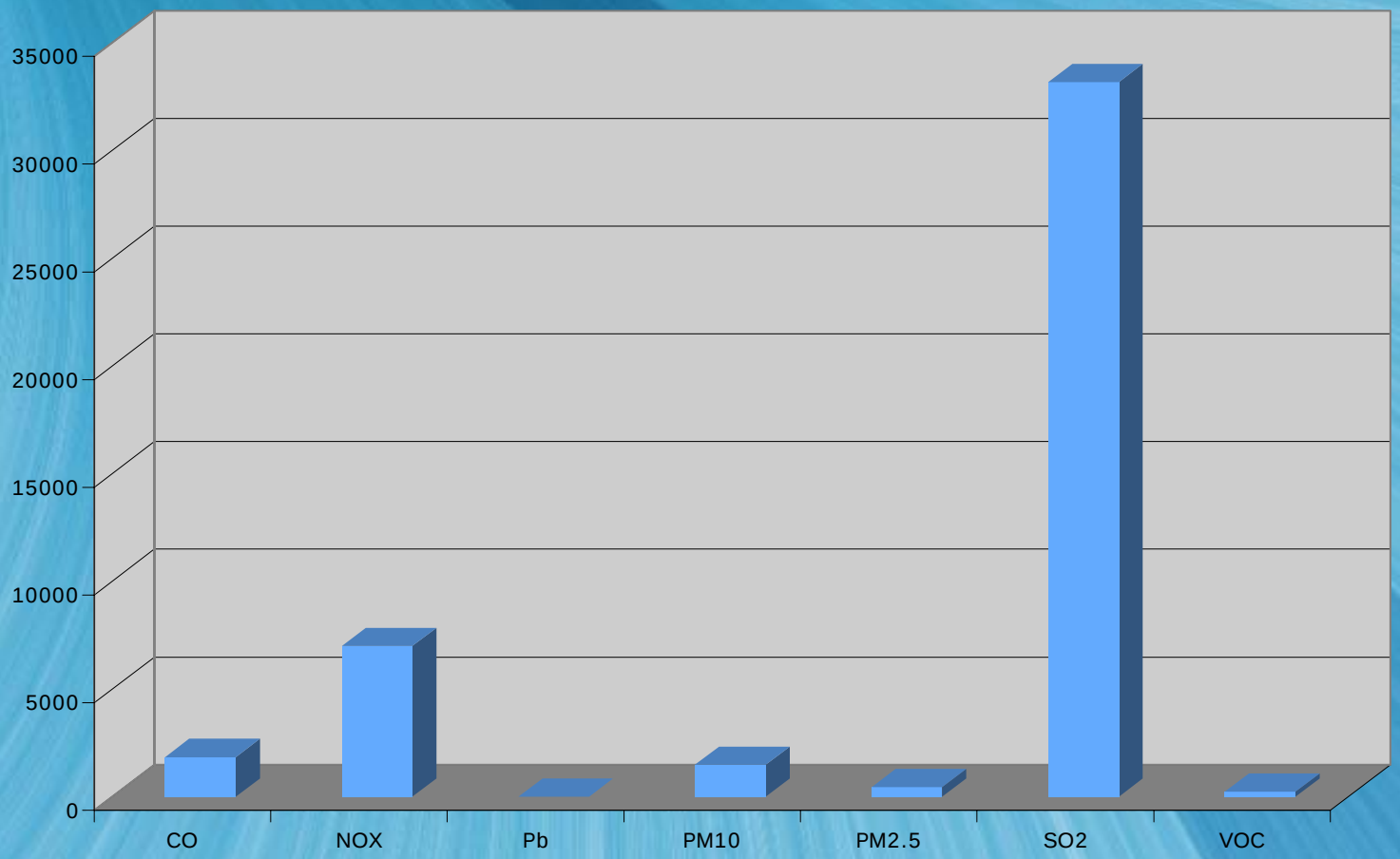
Don’t ignore potential for geothermal and market

- Recent report finds that cost of geothermal going down and potential going up; **Geothermal is the cheapest source of alternative electricity and shows the fastest improvement per dollar invested, according to a study from NYU (Schilling 2009)**
- Markets in ERCOT may provide renewable and other sources of power cheaper than building it ourselves or doing PPA -- we should maintain some flexibility.

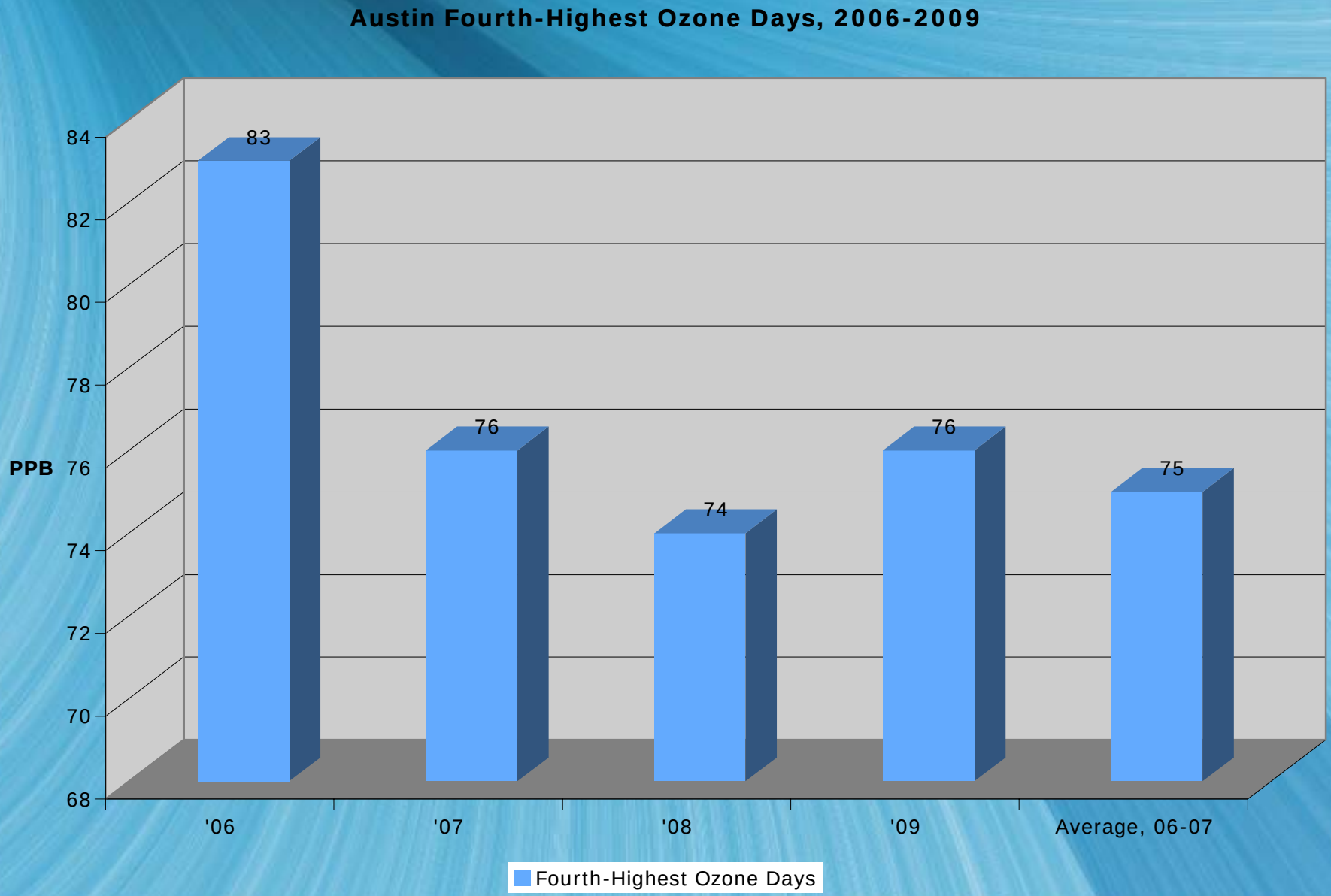
Let's Phase Out Fayette... Fairly to Ratepayers and the Environment

- Simply getting out of Fayette by selling it to someone else to run will not lower ozone-forming emissions or global-warming emissions from plant itself (though could argue system-wide it could lower coal demand)
- We have an obligation to reduce emissions but we also have a duty to ratepayers
- There maybe way to make money by not running the plant and earning CO2 payments
- We run the plant down now when wind resources increase;
- We can end our addiction by 2020 -- or sooner -- if we add both wind, solar, and other resources;
- Quit cold turkey or gradual weaning?

Fayette Power Plant is dirty

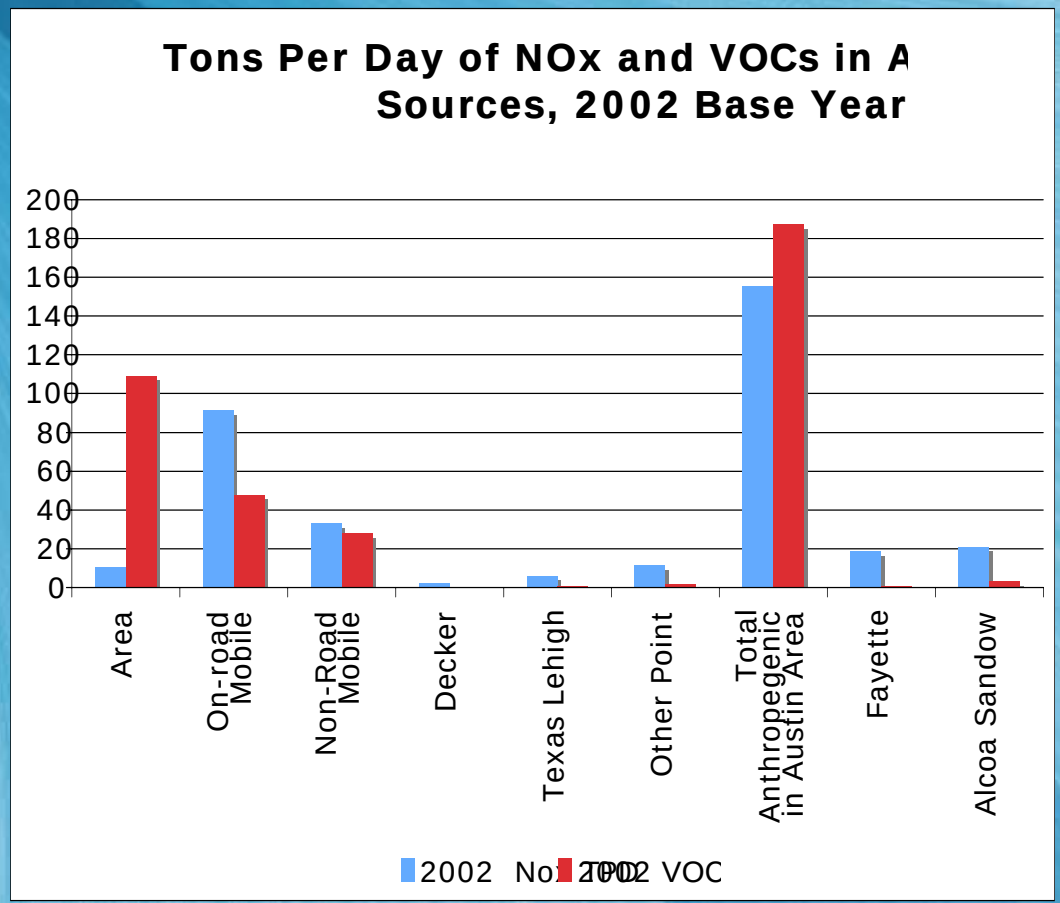


Austin in danger of non-attainment despite 10 years of action on non-attainment



Fayette Power Plant Does Affect Austin Ozone Compliance

- Most Nox emissions in Austin come from cars, but among point sources, FPP can have major impact, particularly since most used during summer months during ozone season
- Austin in danger of being declared nonattainment for ozone particularly if EPA moves from 75 to 70 PPB;
- Running down power plant -- if possible -- would reduce several TPD of Nox emissions



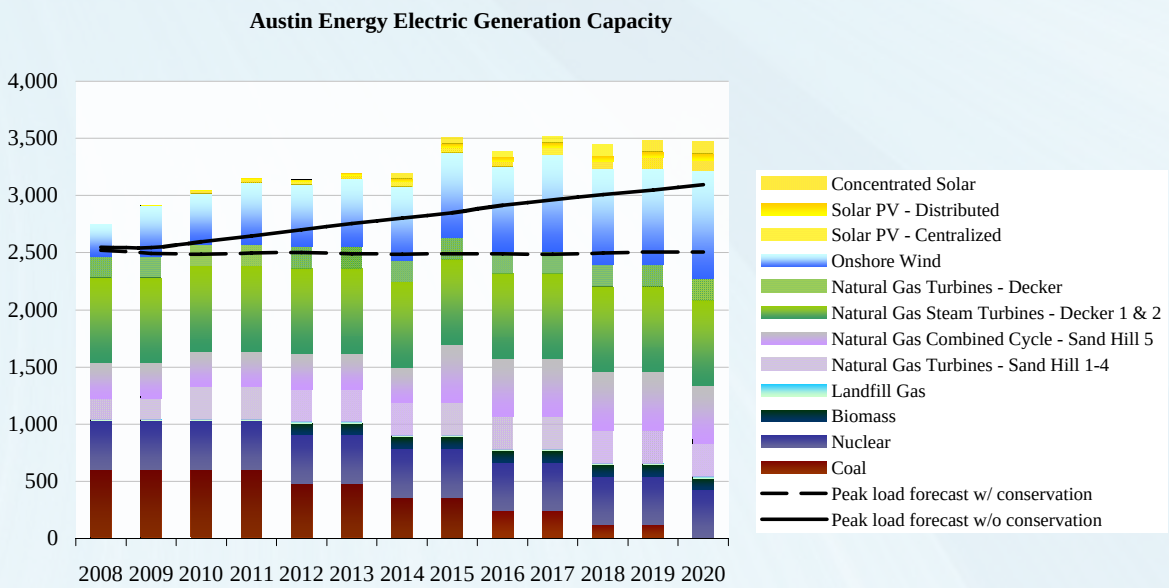
Aggressive vs. Moderate Reed vs. AE Plan

AE Plan	Reed Moderate	Reed Aggressive
800 MW of EE and DR	900 MW of EE and DR based on stimulus & new financing models & raising caps	1000 MW of EE and DR
40% of reduction in use of coal plant ...maybe	100% reduction over next 12 years... slowly	100 % Reduction by 2016
300 MWs new Gas	300 MWs new Gas	200 MWs new gas
200 MWs solar (centralized PV)	Solar --250 total -- 100 MWs central PV, 50 MWs on-site and 100 MWs CSP	Solar -- 300 MWs total -- 100 MWs central PV, 100 MWs on-site and 100 MWs CSP
150 MW of Biomass	100 MWs of Biomass	100 MWs of Biomass
No storage, no geothermal	25 MWs of geothermal 75 MWs of Storage	50 MWs of geothermal 75 MWs of Storage
765 MWs of Additional Wind Capacity (but 562 MWs new)	500 MWs of New Wind	700 MWs of New Wind

AE Plan vs. Reed Plan: Results on LBJ Run

Category	Reed Moderate Plan	Reed Aggressive Plan	AE Plan	Strawman Plan	FPP Pace Model
CO 2 Emissions	**2,329**	**1,766**	**3,648**	**5,163**	**860**
Renewable Generation	**36.5%**	**43.2%**	**36.8%**	**29.3%**	**63%**
Capital Costs	**3,140**	**3,640**	**3,110**	**2,230**	**4,900**
Yearly Fuel Costs	**430**	**340**	**350**	**380**	**230**
Kilowatt Extra	**Unclear because of storage**	**Unclear because of storage**	**6.1**	**2.3**	**6.7**

How we meet our energy needs: Reed Moderate



How we meet our energy needs: Reed aggressive