Western States Petroleum Association

WSPA Presentation – RECLAIM SOx Shave

SCAQMD Refinery Committee

Presented by
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President, WSPA

October 14, 2010

The RECLAIM Journey
Emission Reductions and Percents

	December, 2009	August 18 Refinery Committee	September 16/September 22 Refinery Committee	October 14
WSPA Position (TPD Reduction)	3 TPD (Meet 2007 AQMP)	3.9 TPD: 3 TPD by end of 2014; additional 0.9 TPD by end of 2019 **+ 0.9 TPD**	4.7 TPD:3 TPD by end of 2014; additional 1.7 TPD by end of 2019 **+1.7 TPD**	?
% Reduction (based on 11.77 TPD)	Approx. 25%	33% **+8%**	40% **+15%**	?
SCAQMD Position (TPD Reduction)	7.4 TPD	6.1 TPD: 4.5 TPD by end of 2014 – 1.5 TPD each year; additional 1.6 TPD by end of 2019 **-1.3 TPD**	?	?
% Reduction (based on 11.09 TPD)	67%	55% **-12%**	?	?

Progress to Date

- **July 30, 2010 WSPA proposed an alternate shave methodology to District Staff**

- **August 18, 2010 Refinery Committee meeting:**
  - WSPA 25%/3 TPD shave by end of 2014 required by AQMP to 33% (3.9 TPD) by end of 2019
  - District 41% by end of 2014 and 55% (6.1 TPD) by 2019
  - Compliance costs and RTC's unresolved issues

- **September 16, 2010 WSPA President presented a revised proposal to Dr. Wallerstein; discussed by phone on September 17**
  - WSPA moved to 40% (4.7 TPD) shave, with 3 TPD achieved by end of 2014 **(**AQMP**)** and remaining 1.7 TPD shaved by end of 2019
  - District remained at 55%

- **September 21, 2010 WSPA President and team and Barry Wallerstein and Staff met**
  - Continue to discuss differences for treatment of RTC's and cost**;** no movement on shave proposal

- **September 22, 2010 Refinery committee meeting**
  - WSPA reiterated 40% proposal - District remained at 55%
  - Agreement to develop a cost matrix to detail the difference in estimated cost

- **Open issues from past Refinery Committee meetings:**

  Staff was asked by Board members at the last two Refinery Committee meetings for legal analysis, total number of rules impacting Refineries, industrial water use analysis, and to find a middle ground on the shave requirement.

TABLE 13-1 - RTC Reductions Estimated From 1997 Baseline

Equipment Type	AQMP Method - Projected to 2019											
	Audited 97-98 Fiscal tpd	Growth Factor 1997-2019	2019 with growth	Scenario 3 - Staff's Proposal			Scenario 4 - Intermediate			Scenario 5 - AQMP		
				BARCT Adj Factor	ReM	ReD	BARCT Adj Factor	ReM	ReD	BARCT Adj Factor	ReM	ReD
FCCUs	**5.68**	1.00	5.68	0.06	0.34	5.34	0.06	0.34	5.34	0.26	1.48	4.20
SRU/TG	**2.03**	1.00	2.03	0.63	1.28	0.75	1.00	2.03	0.00	1.00	2.03	0.00
Coke Calciner	**1.31**	1.00	1.31	0.05	0.07	1.25	0.05	0.07	1.25	0.05	0.07	1.25
Sulfuric Acid	**1.06**	1.30	1.37	0.04	0.05	1.31	0.04	0.05	1.31	0.04	0.05	1.31
Glass Melting Furnace	**1.71**	1.45	2.48	0.01	0.02	2.45	0.01	0.02	2.45	0.01	0.02	2.45
Cement Kilns	**0.53**	2.58	1.36	0.74	1.01	0.35	0.74	1.01	0.35	1.00	1.36	0.00
Boilers/Heaters	**6.11**	1.00	6.11	0.20	1.22	4.88	0.20	1.22	4.88	0.20	1.22	4.88
Total Major Equipment	**18.42**	1.10	20.33		3.99	16.34		4.74	15.59		6.23	14.10
Others	**1.06**	1.11	1.18		1.18			1.18			1.18	
Total Remaining In Year 2019 With Growth (Minus 0.054 tpd reductions from R431.1 & R431.2 for AQMP Method)				**5.12**			5.87			7.36		
1.1 x (Total Remaining)				**5.63**			6.45					
RTC Reduction in Yr 2019 w 1.1 Factor = 11.77 - (1.1xTotal Remaining)				**6.14**			5.32					
For alternative shave, % reduction w 1.1 = (shave/11.09)				**55%**			48%					
RTC Reduction in Year 2019 w/o 1.19 Factor = 11.77 - (1.19*Remaining)										3.00		
% Reduction Across Universe w/o 1.1 to compare w AQMP = (shave/11.78)										25%		

WSPA RECLAIM SOx Proposal: September 16, 2010

- Emission Reductions (RTC): 4.7 TPD reduced
- Universe of Sources: 11.77 TPD
- Percent Shave: 4.7 /11.77 = 40%

Underlying Facts

- RTC's: 1.98 TPD of RTC's (comprised of ERC's converted to RTC's and Clean Fuels Credits not subject to shave)

- Emission Reductions achieved as follows:
  - 3 TPD by end of 2014 (2007 AQMP)
  - Remainder of 1.7 TPD achieved by end of 2019

- Shave is across the board
  - Small sources and sources already at BARCT are included in shave

- Source Categories included in shave:
  - FCCU, SRU/TGU, Acid Plants, Glass Plants, Coke Calciner, Cement Plants

- Source Category excluded from shave:
  - Refinery Heaters and Boilers

WSPA – Socioeconomic Report Perspectives

- District's analysis included WSPA's estimated cost to comply; did not incorporate possible facility shutdown scenario and possible job loss data
- WSPA's economic analysis provided possible impacts if a hypothetical median-sized facility were to cease operation in response to the RECLAIM program – part of a huge regulatory burden being placed on the refining industry
- District estimated costs for installation of BARCT on affected sources – not costs of compliance with the shave
- Positive job growth is in temporary construction sector – jobs will disappear once construction is complete; jobs lost are the permanent facility positions as the result of high cost of compliance
- District used the same flawed cost estimates from the original consultant reports; 2x to 6x low for FCCU capital costs and 50% to 200% low for operating costs
- Report did not take into consideration site specific issues nor if a technology was proven for that source category
- Not clear that revised cost estimates fully take into consideration WSPA's concerns nor those of the peer review Norton Engineering Report
- Continued operation of a facility is not a guarantee – many facilities (aerospace, furniture manufacturing, refineries) in the basin have ceased operation
- Current adverse economic climate cannot be ignored – investigating down-side risk of proposed RECLAIM amendment is reasonable and in the public interest

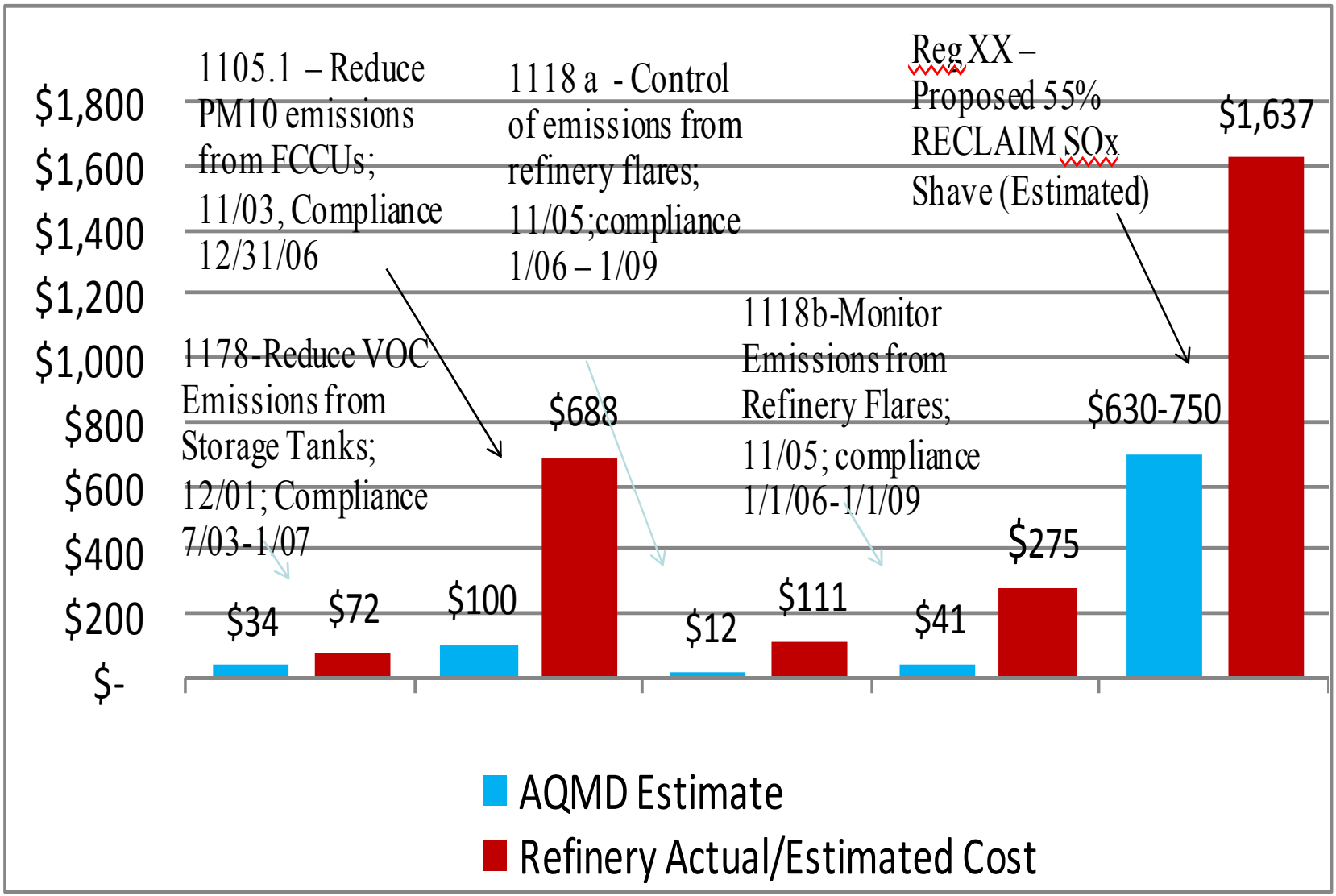
WSPA BARCT Equivalency/ 55% Shave Analysis Summary

Project Type	SCAQMD PV	Number of WSPA Projects / Concentration Range	WSPA BARCT Reductions (Tons/Day)	WSPA BARCT PV	WSPA Additional Reductions to Get to BARCT (Tons/Day)	WSPA Additional PV Costs to Get to BARCT	RTCs or Other Emission Reductions to get to Shave (Tons/Day)	Cost of RTCs or Other Projects to get to Shave	WSPA Total Tons/Day	WSPA Total Cost	Cumulative Total	Project Type	Additional WSPA Cost vs. SCAQMD
FCCU - WGS	$ 389,000,000	3 WGS, 5 ppm	1.97	$ 285,000,000	0.00	$ -	0.00	$ -	1.97	$ 285,000,000	$ 285,000,000	FCCU - WGS	$ (61,000,000)
FCCU - DeSOx	$ -	3 DeSOx, 6-35 ppm	0.50	$ 43,000,000	0.00	$ -	0.00	$ -	0.50	$ 43,000,000	$ 328,000,000	FCCU - DeSOx	
Other Miscellaneous	$ 58,857,000	Unspecified	0.00	$ -	0.48	$ 106,000,000	0.00	$ -	0.48	$ 106,000,000	$ 1,556,000,000	Other Miscellaneous	$ 47,143,000
SRU (1)	$ 181,000,000	6 projects, 5-25 ppm	0.36	$ 331,000,000	0.00	$ -	0.13	$ 253,000,000	0.49	$ 584,000,000	$ 912,000,000	SRU	$ 403,000,000
Other Fuel Gas	$ -	5 projects, <40 ppm in fuel	0.00	$ -	0.33	$ 62,000,000	0.49	$ 467,000,000	0.82	$ 529,000,000	$ 1,441,000,000	Other Fuel Gas	$ 529,000,000
Other Improve CEMs	$ -	3 projects	0.00	$ -	0.11	$ 5,000,000	0.26	$ 4,000,000	0.37	$ 9,000,000	$ 1,450,000,000	Other Improve CEMs	$ 9,000,000
RTCs	$ -	-	0.00	$ -	0.06	$ 4,000,000	1.24	$ 77,000,000	1.30	$ 81,000,000	$ 1,637,000,000	RTCs	$ 81,000,000
Total	**$ 628,857,000**	**-**	**2.83**	**$ 659,000,000**	**0.98**	**$ 177,000,000**	**2.12**	**$ 801,000,000**	**5.93**	**$1,637,000,000**		**Total**	**$ 1,008,143,000**

(1) Avg of $174M-$187M

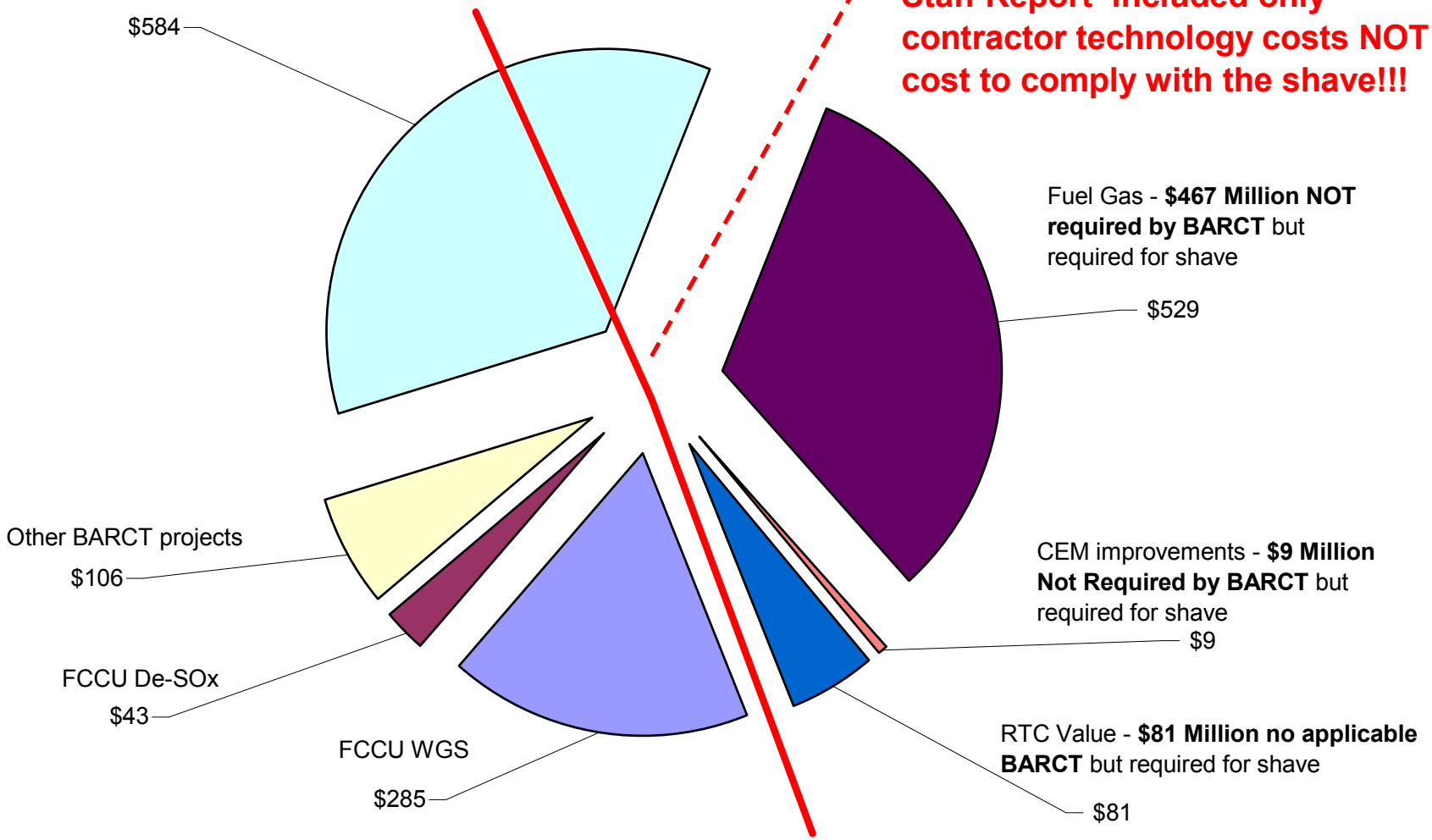
Half of the costs or $801million are associated with emissions beyond what is required for BARCT.

SCAQMD estimated cost versus actual cost
District historically wrong by 3-5X with estimated cost



Refinery Costs - RECLAIM
$ Millions

Area to right of solid line shows EXTRA COSTS FOR REDUCTIONS BEYOND BARCT - approx. $800 Million. SCAQMD Staff Report included only contractor technology costs NOT cost to comply with the shave!!!



SOx RECLAIM Legal Requirements

- SOx RECLAIM is being implemented as a PM measure
- Requirements are not the same for PM as for Ozone, CO and NOx (see Health & Safety Code §40910 et seq.)
  - No specific state law AQMP requirements
  - No requirement for "all feasible measures"
- §39616 "equivalent or greater level of emission reductions at an equivalent or lower cost"

BARCT Requirement

- Emission limitation – maximum reductions
- Must consider cost for entire source category
  - Exclusion of a single unit based on excessive cost lowers the average cost-effectiveness for the category
  - Not to be confused with rule cost-effectiveness
- If the limitation is not cost-effective, then it is not BARCT

Significant Impediments (open issues)

District's proposed safety valve (non tradable RTC account)

- Projects take several years to plan, design, permit and build
- Companies can't wait until the end of the year to put in a scrubber
- You can't plan with uncertainty – companies need perpetuity credits

Requires several hundred million gallons of additional water annually

- 3 out of 6 Refineries do not have access to recycled water
- Capital cost to construct and permit; can water be supplied by compliance date? availability and reliability of water delivery
- Current water price ($800 per acre-foot); cost for higher quality water (such as boiler feed water) is more than $1,250 per acre-foot

Need for future reductions not analyzed

- Need to account for implementation of all rules and regulations, including CARB SOx and PM measures
- Arbitrary/Speculative

Board Policy Decision

- Avoid additional shave beyond BARCT – not required by law
- Preserve market viability and do not create structural buyers
- Ensure cost-effective shave methodology
- Do not penalize early reductions
- Avoid shaving ERC-based RTC's needed for future growth
- Maintain opportunity to Trade
  - Proposed reductions are so large that market is constrained and lower-cost options are precluded