BY ELECTRONIC MAIL
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12 September 2013

Kristin Pollot, Associate Planner
Planning Department
City of Pittsburg
65 Civic Avenue
Pittsburg, CA 94565

Re: **WesPac Pittsburg Energy Infrastructure Project, Recirculated Draft Environmental Impact Report (RDEIR), SCH #2011072053**

Dear Ms. Pollot,

Communities for a Better Environment (CBE) joins in the comments of the Natural Resources Defense Council on the above cited project and RDEIR and respectfully submits these additional comments focused on the project's implications for climate protection. CBE respectfully requests written responses to each of our comments, including those we join in via separately submitted documents, and those herein.

According to the project description in the RDEIR, refinery oil feedstock would be received by rail and ship, stored, and sent via two pipelines to Bay Area petroleum refineries.[1] At least four and potentially all five major Northern California refineries could receive and process these oils.[2] The pipelines are currently owned by oil companies that also own and operate two of these refineries, Chevron and Shell.[1] Again according to the RDEIR, 14.0–21.8 million cubic meters/year (m^3/yr) of oil would be received, stored and then sent for refining by the project annually, with the difference depending upon whether the stated average or maximum capacity is used.[3]

Remarkably, the RDEIR insists the project is needed because existing refinery crude delivery capacity is insufficient without ever disclosing that existing capacity. Estimates based on readily available public information suggest that the project is not really needed. In fact, the data summarized in Table 1 suggest that Bay Area refiners cannot use more than half to three-quarters of the oil WesPac would send them unless they idle or repurpose a substantial portion of their existing dedicated pipeline *and* wharf capacity.

[1] RDEIR at 2.0-43, 2.0-117/118, 2.0-138; see also RDEIR at ES-2/3, 2.0-1/3/4, 2.0-136.

[2] Shell-Martinez, Phillips-Rodeo, Tesoro-Avon, Valero-Benicia, and when the rest of the same pipeline already connected to it is likely used too, Chevron-Richmond (RDEIR at 2.0-43, 2.0-46).

[3] RDEIR at 2.0-2; see also RDEIR at ES-4.

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Table 1. Existing refinery capacities for oil feedstock delivery vs. WesPac project supply

	Refinery capacities (m^3/yr)			PipelineΔ (%) of WesPac supply	
	processing	wharf at site	pipelineΔ	average	maximum
Chevron	14,900,000	14,900,000	—	—	—
Phillips 66	5,540,000	2,970,000	2,570,000	18%	12%
Shell	8,410,000	3,970,000	4,440,000	32%	20%
Tesoro	9,340,000	9,150,000	190,000	1%	1%
Valero	9,860,000	6,960,000	2,900,000	21%	13%
Bay Area	48,050,000	37,950,000	10,100,000	72%	46%

WesPac likely would deliver price-discounted oil it receives by rail in order to use its full 14.0 and 21.8 million m^3/yr delivery capacity. Even if project oil replaces all existing pipeline deliveries, Bay Area refiners cannot use more than ≈46–72% of proposed project capacity unless project oil also replaces oil from other sources that can ship directly to refinery wharves. Project capacity from RDEIR at 2.0-2. PipelineΔ calculated by difference assuming full processing and wharf usage. Refinery crude processing capacities from *Oil & Gas Journal,* 2012 (Phillips 66 Rodeo capacity adjusted for dedicated upstream inputs based conservatively on half of the SFR's Santa Maria facility crude throughput from MRS, 2012). Refinery wharf capacities from Title V air permits (Chevron, Tesoro, Valero), ERM & BAAQMD 2012 (Phillips), and State Lands, 2011 (Shell). Shell, Tesoro, and Valero estimates conservatively based on half of total wharf capacities.

The data in Table 1 should not be interpreted to mean that the project could not use its proposed capacity. Rather, in order to use this capacity, WesPac will need to deliver oil that refiners can already get without paying extra to a "middleman," so it very likely must make this oil cheaper. In this regard, the RDEIR does not mention that crude can account for up to 90% of refinery operating costs,[6] or that lower quality oils, especially bitumen-diluent blends ("dilbits") the project could get from the Western Canadian Sedimentary Basin, are price-discounted.[7] Further, these dilbits are cheaper in part because pipeline-to-boat transport routes are bottlenecked, making transport via rail the way to get that cheap oil to the Bay Area now,[7] consistent with the recent major change in the project.

Thus, the imperative to use project capacity is likely to result in this proposed oil facility enabling Bay Area refining of price-discounted tar sands oils in greater amounts after WesPac receives the oils by rail. The RDEIR omits this implication of the project, although it is profound. Tar sands bitumen is a fundamentally different petroleum resource than so-called "conventional" crude,[8] and the San Francisco Bay Area hosts the second largest refining center in the western United States.[9]

Substantial evidence indicates the potential for greatly increased greenhouse gas (GHG) emissions from refining lower quality oils such as those derived from tar sands bitumen. Briefly,

[6] U.S. Chemical Safety Board, 2013. Chevron interim report at 33 (www.csb.gov).
[7] See Goodman, 2013; Fox, 2013. These sources also describe another Bay Area refining project that could deliver price-discounted tar sands dilbits via rail, which, of course, would be enabled by the recent significant change in the WesPac project that necessitates this recirculated DEIR.
[8] Meyer et al., 2007.
[9] Oil & Gas Journal, 2012. *Worldwide Refining Survey* (http://www.ogj.com/ogj-survey-downloads.html).

these denser oils have proportionately more large hydrocarbons that must be cleaved ("cracked") to make light liquid fuels such as gasoline, less hydrogen, which must be added to make such fuels, and more contaminants such as sulfur and trace elements that must be removed to protect catalysts and meet product specifications. All of this requires more intensive processing that requires more energy, burning more fuel in refineries for that energy and increasing GHG emissions from that fuel combustion. Independent investigations that used a variety of methods have distinguished between this oil quality factor and other factors influencing emissions and shown that oil quality is a major refinery GHG emission driver. Please see the original peer reviewed studies attached for detailed documentation of these points.[10]

Chart 1 shows annual average observations (black diamonds) and predictions based on crude feed density and sulfur content (white diamonds) from the four largest U.S. refining regions, California, and the San Francisco Bay Area (SFBA). Refinery CO_2 emissions are plotted against refinery crude feed density. The diagonal rise of these 52 observations from left to right in the chart indicates increasing emissions with increasing crude feed density. Emissions nearly double, from ≈260–500 kg/m^3 crude refined, as crude density increases from ≈860–930 kg/m^3. The alignment of predicted and observed values further illustrates that crude quality is driving these differences in average emissions among refining regions and years, allowing the prediction of average emissions based on crude feed quality (more detailed findings attached[10]).

The vertical yellow band toward the left in the chart shows the range of annual average density for imported crude oils refined in the SFBA from 2010–2012.[11] The broader light-red band toward the right shows the range of densities for several diluted tar sands bitumen blends[12] that could be transported from Canada via rail to the project and sent by it to Bay Area refineries. The narrower orange or brown band near the middle in the chart shows the approximate weighted average density of the total (foreign imports and domestic) crude slate refined in the SFBA in 2008,[13] the last year a peer reviewed estimate is available for this value.

Review of the chart reveals large differences in average refinery emissions between the three bands. These differences are summarized to the right of the chart (≈50 kg/m^3 between SFBA crude imports and SFBA total crude slate; ≈130 kg/m^3 between SFBA total crude slate and diluted bitumen from tar sands). The chart thus illustrates the evidence indicating that the change in oil feedstock resulting from the project could increase refinery emissions substantially.

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[10] Karras, 2010; Bredeson et al., 2010; UCS, 2011; Abella and Bergerson, 2012.

[11] Weighted averages for all five SFBA refineries combined from U.S. Energy Information Administration, various dates. *Company Level Imports Archives*. (www.eia.gov/petroleum/imports/companylevel/archive) (EIA, 2010; EIA, 2011; EIA, 2012).

[12] See Access Western Blend, Christina Dilbit Blend, Surmont Heavy Blend, and Western Canadian Select in the attachment entitled "Crude Assays."

[13] Weighted average for all five SFBA refineries combined from Karras, 2010; UCS, 2011.

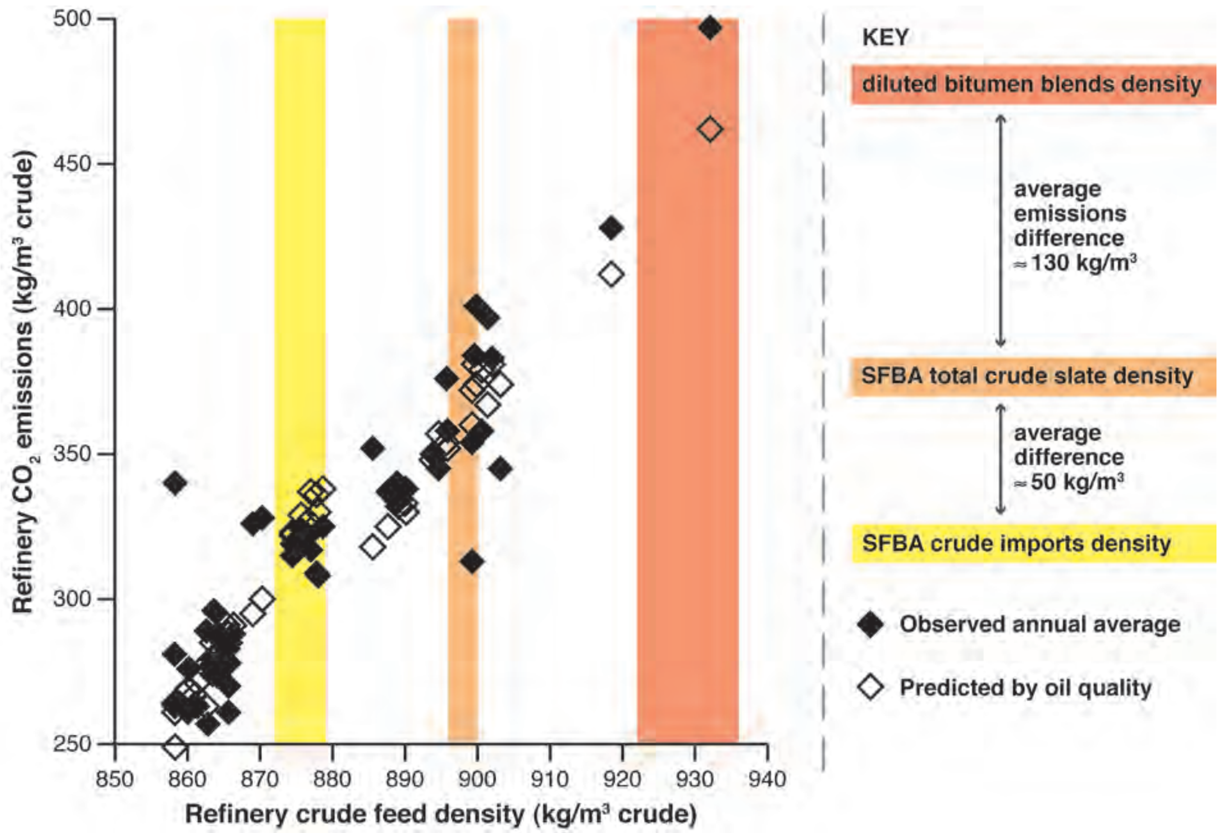

Chart 1. Refinery CO_2 emissions observed and predicted based on crude feed density (shown) and sulfur content (not shown). Observations and predictions for U.S. PADD 1 (East Coast), PADD 2 (Midwest), PADD 3 (Gulf Coast), and PADD 5 (West Coast) from 1999–2008; for California industry-wide from 2004–2009; and for the San Francisco Bay Area (SFBA) industry-wide and individual SFBA refineries from 2008. Data from Karras (2010) and UCS (2011) except SFBA crude imports density annual averages during 2010–2012 from EIA (2010–2012) and density range of diluted tar sands bitumen streams from Canadian Oil Quality Monitoring Program (see "Crude Assays").

The RDEIR provides no information about how much of the project's 14.0–21.8 million m^3/yr of oil will be from tar sands and does not specify how much of current domestic, and foreign, supplies it will replace, but those questions are major determinants of how much the project would increase GHG emissions. For example, based on the per-volume increments observed as illustrated in the chart: Emissions could increase by ≈450,000 tonnes per year if only 25% of average project throughput is tar sands dilbit that replaces current foreign and domestic oils equally; but emissions could be greater (≈630,000 t/yr) if this same 25% replaces only current foreign import crude oils; and if dilbit is 75% of the project's maximum capacity emissions could increase by ≈2–3 million tonnes/year.

These figures indicate the scale of potential emission increments rather than their precise quantification. More precise estimates could be made using project oil-source specifications that the RDEIR does not disclose, but WesPac surely reviewed before committing to the project. For example, the City could ask WesPac to provide its estimates of the quantity and quality of oils to be delivered (in verifiable form, such as project conditions), and the City could then use at least two peer reviewed estimation methods that are designed to be used with publicly verifiable data.[14] Notwithstanding the broad range of uncertainty due to these problems with the RDEIR, however, any of the potential emission increments described above would exceed the 35,000 t/yr GHG emissions that the RDEIR estimates by more than ten times.

Equally important, the project could interrupt and foreclose the continuation of a nascent trend that might greatly reduce current refinery emissions. The current average density of foreign crude imports processed region-wide is close to that of the average crude processed nationwide, and significantly less "dirty" than the SFBA total crude slate (see Chart 1). If imports processed grow to replace 14 million m^3/yr of current domestic crude processed in the region—which is plausible and also suggested in the RDEIR—the data in Chart 1 suggest regional refinery GHG emissions might decrease by ≈700,000 t/yr. However, this would require a project condition prohibiting oils "dirtier" than the current regional imports or nationwide average, and no such condition is proposed in the RDEIR. As it stands, the project could foreclose this potential for continuing emission reduction, and the full difference in GHG emissions that could result from the project includes the emission increment discussed above *and* this lost opportunity.

Thus, the full GHG emissions impact resulting from the project has the potential to be a total increment exceeding a million tonnes per year—which would far exceed the cumulative decrement claimed by the RDEIR from GWF power plant closures.[15]

Other deficiencies in the RDEIR exacerbate its omissions discussed above and should be addressed. The RDEIR omits authoritative data documenting decreasing statewide use of refined fuels since 2006[16] while asserting (incorrectly) that increasing regional demand for refined fuels necessitates refining oil in greater amounts.[17] It omits disclosures that some refineries seek to export more product and also to get more price-discounted crude delivered for processing.[18] It does not include at least four regional refining industry proposals that are parts of this "cheaper dirtier crude" strategy and in combination with the WesPac project could cause emissions.[19] It does not include any of the available information on the potential change in feedstock quality resulting from the project[20] or the GHG emission implications of that change.[21] There is substantial

[14] Specifically, volume, density, sulfur content, hydrogen content, and distillation fraction data for each oil stream the project plans to tap would allow more precise estimates, as shown in Karras, 2010; and Abella and Bergerson, 2012 (ideally, both methods should be used).
[15] See CARB, 2013 (most recent emission reports to state Air Resources Board).
[16] EIA, 2013; data for 2006–present (www.eia.gov/dnav/pet/pet_sum_mkt_dcu_SCA_m.htm).
[17] See RDEIR at 1.0-6, see also 1.0-3, ES-2.
[18] See Karras, 2013 at 12.
[19] Valero crude by rail project (see Fox, 2013; Goodman, 2013); Phillips 66 propane recovery project (see Karras, 2013); Chevron revised renewal project (see Chevron, 2011); and Contra Costa pipeline project (see Karras, 2009).
[20] See Crude Assays; Karras, 2010; UCS, 2011.
[21] See Karras, 2010; Bredeson et al., 2010; UCS, 2011; Abella and Bergerson, 2012.

evidence that averting catastrophic climate impacts will require leaving approxiately half of current fossil fuel reserves underground,[22] and this suggests refining the least-polluting half of what is left while transitioning to clean energy, but the RDEIR ignores this evidence as it argues for the need to refine more oil.

In sum, there is a reasonable potential that GHG emissions resulting from the project will exceed those the RDEIR estimates by more than an order of magnitude, and this would increase regional GHG emissions substantially, and there is also a measure within the project's purview that could reduce GHG emissions. Additionally, this potential measure could reduce emissions by an amount that likely would be greater than the non-refinery GHG emission increment estimated in the RDEIR. The RDEIR's assertions that the project would increase GHG emissions by only 35,441 tonnes/year,[23] that this is unavoidable,[23] and that cumulative GHG emissions would be expected to *decrease* in the vicinity of the project,[24] are in substantial error, and its description of the project and its environmental implications is deficient.

Respectfully submitted 12 September 2013,

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> Attachments: Abella and Bergerson, 2012; Bredeson et al., 2010; Crude Assays; Fox, 2013; Goodman, 2013; Karras, 2010; Karras, 2013; MRS, 2012; State Lands, 2011; and UCS, 2011, as identified and referenced herein

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[22] See Meinshausen et al., 2009. *Nature* 458: 1158–1162 (DOI: 10.1038/nature08017); Allen et al., 2009. *Nature* 458: 1163–1166 (DOI: 10.1038/nature08019); see also Davis et al., 2010. *Science* 329: 1330–1333 (DOI: 10.1126/science.1188566); Hoffert, 2010. *Science* 329: 1292–1294 (DOI: 10.1126/science.1195449).

[23] RDEIR at 5.0-14.

[24] RDEIR at 18.0-6.