**HiTest/PacWest Newport Silicon Smelter Quick Facts.**

***SILICON SMELTING PROCESS***

* The Canadian HiTest/PacWest Newport silicon smelter will use **COAL** as a carbon reductant for extracting “metallurgical grade” silicon (MGSi) from silicon dioxide (quartz).
* The smelter will require a constant (24/7) electrical energy supply of **105 Megawatts** (hydroelectric) to heat 2 submerged arc furnaces at greater than **3,000 degrees** Fahrenheit.
* The smelter will have one **157-foot tall emissions stack** for 2 furnaces.

***SILICON SMELTER EMISSIONS***

* 1st Emissions Estimate, Tons per Year (tpy): **Greenhouse Gases (CO2) = 320,256 tpy**\*; **Sulfur dioxide (SO2)** **= 760 tpy**\*; **Nitrogen Oxides (NOx) = 700 tpy**\*; **Particulate Matter (PM) = 111 tpy**\*; PM10 = 89 tpy\*; PM2.5 = 85 tpy\*; Volatile Organic Carbons (VOC) = 20 tpy; Lead (Pb) = 0.1 tpy;
* 2nd Emissions Estimate, Tons per Year (tpy): **Greenhouse Gases (CO2) = 766,131 tpy**\*; **Sulfur dioxide (SO2) = 649 tpy**\*; **Nitrogen Oxides (NOx) = 935 tpy**\*; **Particulate Matter (PM) = 45 tpy**\*; PM10 = 36 tpy\*; PM2.5 = 34 tpy\*; Volatile Organic Carbons (VOC) = 90 tpy; Lead (Pb) = 0.1 tpy;.
* Other Coal Toxins not listed: **Arsenic (As)**; **Mercury (Hg)**; **Cadmium(Cd)**; and others.

*\*Prevention of Significant Deterioration triggers (PSD)*

***HEALTH IMPACTS***

**SO2**. Harmful effects on the lungs and respiratory system; can reduce the ability of the lungs to function.

**NO2**. Harmful effects on the lungs: Increased inflammation, reduced lung function, and increased asthma attacks. NO2 may be a cause of asthma in children.

**PM**: Small particles 10 micrometers (or less) in diameter. PM can get deep into lungs, and may also enter the bloodstream. Impacts: premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated [asthma](https://www.epa.gov/asthma), decreased lung function.

**VOC**s: Cancer; also linked with cardiovascular disease and poor fetal development.

**Arsenic**: Cancer. **Lead** and **Mercury**: neurological and behavioral disorders.

***ENVIRONMENTAL IMPACTS***

Forest, wildlife, soil, air, and water quality damage due to acid rain and contamination from the toxic coal emissions. The thermal inversions that are prevalent from early fall through spring will concentrate the toxic emissions, exacerbating negative health effects.

***LOCATION***

The smelter will be located **within one-to-two miles of nine Newport schools**, athletic fields, parks, the **Newport Hospital**, and downtown Newport. **Newport’s children will be exposed to serious health risks.**

***LOCAL ENVIRONMENT***

The natural environment surrounding Newport is already under serious threat. Our forests are suffering from insect infestations and diseases, and are increasingly susceptible to wildfires. The Pend Oreille River and the Little Spokane River watershed have been identified as having water quality and water quantity issues. Our soils are mostly acidic, and aluminum toxicity is on the rise in Eastern Washington and Northern Idaho.

**From ”A Smart Carbon Policy that Works for Washington”, by Hilary Franz, state commissioner of public lands:**

*“The rural communities that surround Washington’s forests, farms and waterways are on the frontlines of climate change. They endure the impacts of greater disease, drought and acidifying oceans first hand – and they must be part of the solution. Natural resource-based communities need to be part of a Smart Carbon Policy for wise and productive adaptation to a changing climate.”*

***HiTest/PacWest FALSE CLAIMS AND MISLEADING STATEMENTS***

* **The PacWest website states**: “Production process does not require or produce any heavy metals or hazardous chemicals as by-products – All materials required during production process and consumed leave the plant as a saleable product.” **But, disturbingly, PacWest’s statement fails to disclose the hundreds of tons of toxic emissions – the “*by-products.”***

Governor Inslee’s endorsement is listed on the PacWest website.

* **From the HiTest Silicon *(now PacWest)* 2017 slide presentation**: **“50% of HiTest silicon metal production will be sold into the solar panel end-market (polysilicon)”**. But this defies recent market analyses for Metallurgical Grade silicon (MGSi), which estimate 50% MGSi is for aluminum alloy casting industry, 40% is for the chemistry industry (silicones, etc.), and **10% is for electronic chip industry and solar industry. Approximately 5% of MGSi is for Solar Panels.** *NOTE: HiTest/PacWest has recently admitted that only 5% of their MGSi will be for solar panels. The carbon footprint and coal toxin footprint for solar panels will be tremendous and will take decades to offset.*

**In the 3/5/19 Beacon PacWest article, CEO Tymko makes statements about his silicon smelter that contradict what can be found in the literature.**

**Tymko statements**. “**We still rely on the science and the facts**.” “**We are not a coal burning smelter**”. “**Coal doesn’t burn anywhere near the temperature needed.**” “We use coal as a reductant.” “**The facility will be a “green” plant, with no coal ash or smoke, and they are not feeding into any area waterways.**”

***From Wikipedia****: “*Combustion, or burning is a high-temperature exothermic redox chemical reaction between a fuel (the reductant) and an oxidant, usually atmospheric oxygen, that produces oxidized, often gaseous products, in a mixture termed as smoke**.**”

***From MARCEP INC****:* “For coal, ignition temperature is in the range of 400 to 425-degrees centigrade” (752 to 797 degrees F). “During combustion, combustible elements of coal like carbon, sulfur, and hydrogen combine with oxygen and produce heat along with respective oxides.”

***So, coal ignites at 752 – 797 degrees F. Coal undergoes combustion (burns) in the presence of oxygen to produce gaseous products (smoke), including CO2 and other coal emissions. Contrary to Tymko’s statements, the smelter will “burn coal” and will produce “smoke”.***

**Tymko statements**. “Tymko said they need the carbon atoms from the Blue Gem Coal to produce the pure silicon metal, **and if the coal is burnt, it will vaporize the carbon**. “**It is a green project”, Tymko said**. “We emit CO2 but for every ton of CO2 we emit, there is a nine-ton pickup because of the products.”

***Wikipedia*:** “Vaporization”of an element or compound is a phase transition from the liquid phase to vapor. There are two types of vaporization: evaporation and boiling.

***ThoughtCo***: “Sublimation” is the transition from the solid phase to the gas phase without passing through an intermediate liquid phase.

*Various sources*: **Carbon’s sublimation point: 6,422F to 6,588F. At normal atmospheric pressure, carbon does not melt when heated, it sublimes (sublimation).**

Smelter furnace temperature: 3,000+ degrees F.

*Various sources*: Silicon dioxide Melting Point: 2,912F to 3,115F.

***So, carbon does not “vaporize”. Carbon does not reach its sublimation point (6,422F) in the 3,000F furnace. Coal undergoes combustion (burning), and its carbon reduces molten Silicon dioxide to Silicon while carbon is oxidized to CO2. And lastly, where’s the proof (calculation) of this “nine-ton pickup”?***

***The “science and facts” that Tymko relies on seem to contradict the science and facts found in literature.***

***GOVERNMENT SECRECY AND MISCONDUCT***

Improper, secretive land sales, County Comprehensive Plan Amendment CPU-18-001 “Blanket Rezone”, Pend Oreille County and the city of Newport prohibition of citizen discussion of the smelter during public meetings, inaccurate information regarding county economic status and a highly flawed telephone opinion survey provided by the Economic Development Council (EDC).

Despite overwhelming opposition to the smelter, citizens and citizen groups have had their voices stifled, discouraged, and even prohibited.

Example 1:

**Sept. 20, 2017 issue of The Newport Miner**. We read that the PUD purchased 13 acres of property (adjacent to a 172.47-acre property south of Newport that PUD already owns) from Pend Oreille County in June 2017. “HiTest identified the PUD’s south Newport property plus an adjacent 13 acres owned by Pend Oreille County as a potential site…” **“In June 2017, the PUD officially acquired the adjacent county property with the intent to sell the entire package to HiTest.”**

Something fishy about this land sale. The **April 24/25 2017 Pend Oreille County Commissioners meeting includes:**

**(15) “The Board convened in executive session regarding the potential sale of real estate pursuant to RCW 42.30.11(1)(c)…” Note: an executive session is a private session—no members of the public are allowed.**

**(18) “Motion was made by M. Manus to pursue a potential agreement with the PUD on the sale of a 14-acre parcel of land south of Newport. Motion was seconded by K. Skoog. Motion carried unanimously.”**

**Why the secret meeting?** The county purchased the 10 acres of land in order to sell the 10 acres to the PUD so the PUD could sell an entire package of parcels to HiTest without citizen knowledge.

A legal challenge regarding the PUD land sale to Hitest/PacWest is currently under appeal by Responsible Growth NE Washington (RG\*NEW) and Citizens Against the Newport Silicon Smelter (CANSS).

Example 2:

**Pend Oreille County Commissioners Comprehensive Plan amendment CPU-18-001 involves sweeping changes that eliminate the “Public Land” designation for all currently designated Public Lands.** Public lands include Federal, State, local agencies, and private ownership. CPU-18-001 public land rezone would impact lands across approximately 2/3 of the county, and would allow more intense uses; including industrial, residential, and other development.

**A recent article in the Sandpoint Reader (3/29/19) confirmed speculation that CPU-18-001 would facilitate the location of the controversial smelter in Newport. From the Reader: “… until the county amends its Comprehensive Plan to “reform the current county zoning laws,” PacWest is unable to apply for a conditional use permit.”**

**After diligent deliberation, the Pend Oreille County Planning Commission recommended to deny the blanket Public Land rezone CPU-18-POC at its 4/9/2019 meeting**. County Commissioners will make a final decision at some point in the future.

Pend Oreille County declared the CPU-18-001 SEPA checklist as a “Determination of Non-Significance” (DNS) with regard to environmental impacts. This is currently under appeal by Responsible Growth NE Washington with Gonzaga University Legal representation.

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