

**Claims are made it would cost nearly a *billion* dollars to Phase Out deadly MHF in LA ...  
... but U.S. refineries have published actual costs of only \$100-400 million!**

Thirty years after proceedings started to ban use of deadly hydrogen fluoride (HF) at oil refineries in the region, the South Coast Air Quality Management District (AQMD) is again considering phasing out its use, after a refinery explosion almost caused a catastrophic release of MHF (Modified HF). (This fact sheet focuses on costs, but also see [CBE and broad coalition letter to AQMD Board](#) for background on risks and history.)

Claims were made that two SoCal oil refineries would have to shut down their highly lucrative operations permanently, if the AQMD requires MHF replacement with a safe alternative. But high costs claimed for phaseout at nearly a billion dollars<sup>1</sup> for each refinery are unsubstantiated and contradicted (see below). Only two California refineries use MHF. **Jobs will be created, not lost, while modifying or replacing MHF alkylation units.** Unit shutdown time will be much shorter than the full phase-out period and inventories will be built ahead of time to limit gas price impact.

**Other U.S. refineries report *actual* costs for building units using alternatives to deadly MHF, at \$100-\$400 million:**

- **\$103 million**—Delek Louisiana—new conventional sulfuric acid alkylation unit<sup>2</sup>
- **\$300 million**—Valero Houston—conventional sulfuric acid alkylation unit<sup>3</sup>
- **\$400 million**—Valero, St. Charles, Louisiana—advanced sulfuric acid (requires less acid, and size equals the Torrance refinery in LA)<sup>4</sup>
- **\$87 million**—Chevron Salt Lake City converting existing HF unit to ionic liquids (Honeywell process)<sup>5</sup>

Some of these units are smaller than the Torrance and Valero refinery, but if cost is scaled up to Torrance refinery size, costs range from \$300-400 million.

*(Information on these 4 refineries above thanks to Dr. Sally Hayati, Torrance, Director of Ban Toxic MHF, readily confirmed in footnotes below. Dr. Hayati has extensively documented harms, history, and costs.)*

This isn't cheap, but costs are in line with many refinery projects, are far below refineries' worth, and would create jobs. Most importantly, phasing out MHF quickly will entirely remove a dangerous risk for hundreds of thousands of Angelinos, from major releases that could cause death, permanent lung damage, blindness, or other severe harms. A catastrophic release *did* almost occur at the Torrance refinery in 2015, according to the U.S. Chemical Safety Board. **Costs of phasing out this dangerous chemical should be a normal cost of business.**

**Don't believe Big Oil Scare Tactics about Jobs Loss – Read the Real Costs, & Consider Lives that could be Lost**

<sup>1</sup> For example, SCAQMD, [Status Update on PR 1410](#) – Hydrogen Fluoride Storage and Use at Petroleum Refineries, for Feb 1, 2019 Meeting, \$900 million oil industry consultant estimate quoted, Slide 31

<sup>2</sup> [US Delek Holdings to add alkylation unit at Louisiana refinery](#), ICIS News, 2018/01/16, from refinery SEC filing, (3-year project), [“HOUSTON (ICIS)--US refiner Delek US Holdings will install a 6,000 bbl/day alkylation unit at its Krotz Springs, Louisiana, refinery, according to information made available on Tuesday. . . Total cost is estimated at \$103m, according to the filing.”]

<sup>3</sup> [Valero Energy Reports First Quarter 2016 Results](#), 13,000 bpd unit, Globalwire, (3-year project), [“The \$300 million Houston alkylation project announced in January entered the detailed engineering, procurement, and construction phase of the development process during the quarter. This 13,000 BPD unit, which upgrades low-cost natural gas liquids into premium-value alkylate, is expected to be completed in the first half of 2019.”]

<sup>4</sup> [Valero Energy Reports 2017](#), from Valero.com, p. 5, (3-year project) [“Included in the growth investments is the construction of a new 25,000 barrels per day alkylation unit at the St. Charles refinery, which received final approval from the company's Board of Directors last week. Total cost for the alkylation unit is estimated at \$400 million, and completion is expected in the second half of 2020.”]

<sup>5</sup> Oil and Gas Journal, [Chevron's Salt Lake City refinery plans alkylation unit revamp](#), Oct 4, 2016, (3-year project) [“Chevron will convert the existing 4,500-b/d HF alkylation unit at Salt Lake City to ISOALKY, a proprietary alkylation technology developed by Chevron USA Inc. and now licensed by Honeywell International Inc.'s UOP LLC, that uses ionic liquids instead of HF or sulfuric acids as a liquid alkylation catalyst for production of high-octane fuels, UOP said.”] and [O&G Journal 2/1/17](#) (\$67 + \$20 million)

