



## **DATASmart LCI Package**

# **What's New in DATASmart 2021?**

**Published December 2021**

Long Trail Sustainability (LTS)  
830 Taft Road, Huntington, VT 05462  
Email [support@ltsexperts.com](mailto:support@ltsexperts.com) • Phone (802) 434-3326 • [www.ltsexperts.com](http://www.ltsexperts.com)

## Details on 2021 Update

The 2021 DATASMART update includes 13 new processes and hundreds of updated processes<sup>1</sup>. This includes a new process for natural gas consisting of 70% shale gas and new electricity data for Puerto Rico at production, high, medium, and low voltage levels. Electricity mixes for U.S. eGRID, U.S. state and the U.S. country average were also updated to incorporate the most recently published data. Two new waste scenarios for general waste and packaging waste were created based on the most recent publications from the U.S. Environmental Protection Agency. The LTS Method was updated with the latest ReCiPe 2016 version 1.05 method.

For more details, see below and in the full process list at *DATASMART 2021 Full Process List.xlsx*, available upon request by emailing [support@ltsexperts.com](mailto:support@ltsexperts.com).

### Updated US electricity

The following U.S. eGrid (including newly added Puerto Rico), all 50 U.S. states and the District of Columbia electricity mix processes, and the U.S. average were updated, based on 2019 data from the U.S. Environmental Protection Agency (EPA), published in 2021.

- Alaska Systems Coordinating Council (ASCC)
- Florida Reliability Coordinating Council (FRCC)
- Hawaiian Islands Coordinating Council (HICC)
- Midwest Reliability Organization (MRO)
- Northeast Power Coordinating Council (NPCC)
- Puerto Rico (PR)
- Reliability First Corporation (RFC)
- SERC Reliability Corporation (SERC)
- Texas Regional Entity (TRE)
- Western Electricity Coordinating Council (WECC)

### New Waste Scenarios

Two new waste scenarios were added, based on 2018 data from the EPA, published in December 2020.

- Waste scenario 2018/US U
- Packaging waste scenario 2018/US U

---

<sup>1</sup> Processes updated directly. Does not include processes with updated documentation, processes moved to a new category or processes that have updated processes as an input (e.g. if the electricity production mix was updated, the high/medium/low voltage electricity processes are not counted as updated).

### Shale gas as a percentage of total natural gas

A new process was created to represent natural gas consisting of 70% shale gas. Natural gas in the U.S. was 23% shale gas in 2018, but was 70% in 2020, according to the U.S. Energy Information Administration (EIA) data on gross withdrawals of natural gas.<sup>2</sup> Natural gas was updated to contain 70% shale gas for all U.S. and Canadian electricity mixes. Canadian natural gas production/consumption is estimated to be 70% shale gas as well, based on published facts from the Government of Canada.<sup>3</sup>

### Energy Mixes

LTS updated the underlying energy and electricity mixes to represent recent conditions in the U.S. This data is more frequently updated and more specific than data found for U.S. energy in other databases.

The underlying electricity and natural gas mix are based on eGrid2019, U.S. Environmental Protection Agency (EPA) data published in 2021. See Table 1 for more details.

*Table 1: Underlying U.S. electricity mix (Source: U.S. EPA)*

	2019
Hard coal	23.3%
Oil	0.6%
Natural gas	38.50% (70% shale)
Petroleum coke	0.3%
Biomass	1.6%
Nuclear	19.6%
Hydro	6.8%
Geothermal	0.4%
Solar PV	1.7%
Wind	7.1%
Unknown purchased fuel (0.1%) was added to the highest energy source, natural gas.	

<sup>2</sup> [https://www.eia.gov/dnav/ng/ng\\_prod\\_sum\\_dc\\_NUS\\_mmcf\\_a.htm](https://www.eia.gov/dnav/ng/ng_prod_sum_dc_NUS_mmcf_a.htm)

<sup>3</sup> <https://www.nrcan.gc.ca/science-and-data/data-and-analysis/energy-data-and-analysis/energy-facts/natural-gas-facts/20067>

### Updated LTS 2019 Method

The *LTS 2019 Method* was updated based on the latest ReCiPe 2016 version 1.05 method. The LTS 2019 method also includes Cumulative Energy Demand version 1.11, and Climate Change from the IPCC 2013 GWP 100a (100 year) version 1.03.

*Table 2: Selected impact categories and corresponding methods and units of measure for the LTS 2019 v1.02 Method.*

Impact Category	Method	Units
Human Health	ReCiPe 2016 Endpoint (H) V1.05	DALY
Ecosystems	ReCiPe 2016 Endpoint (H) V1.05	Species.yr
Resources	ReCiPe 2016 Endpoint (H) V1.05	\$
Cumulative Energy Demand	CED V1.11	MJ
Climate Change	IPCC 2013 GWP 100a V1.03	kg CO <sub>2</sub> eq.
Water Use	ReCiPe 2016 Midpoint (H) V1.05	m <sup>3</sup>