PV Power Plants process

nutsid: text.

Identifier of NUTS2 region for which the analysis will be carried out.

slope_angle: integer between 0 and 360.

Maximum slope angle in º with which a land area can be considered suitable for PV Installation.

area_total_thermal: null, or integer between 0 and 10000000000.

Area in m2 to deploy CSP technology.

area_total_pv: null, or integer between 0 and 10000000000.

Area in m2 to deploy PV technology.

power_thermal: null, or integer between 0 and 1000000000000.

CSP power capacity in MW to be deployed.

power_pv: null, or integer between 0 and 1000000000000.

PV power capacity in MW to be deployed.

capex_thermal: null, or integer between 0 and 500000000000.

Investment in € to deploy CSP technology.

capex_pv: null, or integer between 0 and 500000000000.

Investment in € to deploy PV technology.

tilt: integer between 0 and 90.

Tilt angle in º from horizontal plane.

azimuth: integer between 0 and 360.

Orientation (azimuth angle) of the (fixed) plane of array. Clockwise from north.

tracking_percentage: integer between 0 and 100.

Percentage in % of single-axis tracking systems from the total PV capacity. The rest is considered fixed mounted systems.

loss: integer between 8 and 20.

Percentage in % of power losses of PV systems. Please read the documentation to understand which other losses are already included in the model.

efficiency_thermal: integer between 25 and 65.

Thermal efficiency in % of collectors of CSP systems.

efficiency_optical: integer between 45 and 85.

Amount of incoming solar radiation in % captured in the collectors of CSP systems.

aperture: integer between 25 and 75.

Aperture area in % of solar field of CSP systems.

system_cost_thermal: decimal number between 1 and 10.

CAPEX in €/W of CSP technology to compute CSP power capacity to be installed from a given investment.

system_cost_pv: decimal number between 0.2 and 1.

CAPEX in €/W of PV technology to compute PV power capacity to be installed from a given investment.

opex_thermal: decimal number between 0 and 40000.

Annual Operational Expenditures in €/MW for CSP technology.

opex_pv: decimal number between 0 and 30000.

Annual Operational Expenditures in €/MW for PV technology.

min_ghi_thermal: integer between 1500 and 2500.

Minimum annual Global Horizontal Irradiance in kWh/m2 in a land area to install CSP systems.

min_ghi_pv: integer between 500 and 2000.

Minimum annual Global Horizontal Irradiance in kWh/m2 in a land area to install PV systems.

land_use_thermal: integer between 25 and 100.

Land use ratio of CSP technology in W/m2 to compute required area for a given CSP power capacity.

land_use_pv: integer between 50 and 200.

Land use ratio of PV technology in W/m2 to compute required area for a given PV power capacity.

convert_coord: integer with the value 0 (False) or 1 (True).

Convert coordinates expressed into EPSG:3035 to EPSG:4326.

pvgis_year: integer between 1900 and 2020.

Year for calculate time-series hourly production.

Building Stock Energy Model process

nutsid: text.

Region over which the model will be generated.

year: integer between 1900 and 2050.

Year of the modeled scenario.

increase_residential_built_area: decimal number as percentage, between 0 and 1.

% increase in residential built area compared to the base year. Represents the construction of new residential buildings.

increase_service_built_area: decimal number as percentage, between 0 and 1.

% increase in tertiary built area compared to the base year. Represents the construction of new tertiary buildings.

hdd_reduction: decimal number as percentage, between 0 and 1.

Reduction in heating degree days for future scenario.

cdd_reduction: decimal number as percentage, between 0 and 1.

Reduction in cooling degree days for future scenarios. The value represents the reduction. If the value is negative, it will imply an increase.

building_use: text.

Input values are defined for each of the building uses.

user_defined_data: boolean.

Indicates whether the values used are user defined or those from the database are taken.

pct_build_equipped: decimal number as percentage, between 0 and 1.

Represents the % of buildings equipped with the technology.

% of buildings supplied by each type of fuel:

solids: decimal number as percentage, between 0 and 1.

lpg: decimal number as percentage, between 0 and 1.

diesel_oil: decimal number as percentage, between 0 and 1.

gas_heat_pumps: decimal number as percentage, between 0 and 1.

natural_gas: decimal number as percentage, between 0 and 1.

biomass: decimal number as percentage, between 0 and 1.

geothermal: decimal number as percentage, between 0 and 1.

distributed_heat: decimal number as percentage, between 0 and 1.

advanced_electric_heating: decimal number as percentage, between 0 and 1.

conventional_electric_heating: decimal number as percentage, between 0 and 1.

bio_oil: decimal number as percentage, between 0 and 1.

bio_gas: decimal number as percentage, between 0 and 1.

hydrogen: decimal number as percentage, between 0 and 1.

electricity_in_circulation: decimal number as percentage, between 0 and 1.

electric_space_cooling: decimal number as percentage, between 0 and 1.

solar: decimal number as percentage, between 0 and 1.

electricity: decimal number as percentage, between 0 and 1.

ref_level: text.

Type of renovation implemented: Low, Medium, or High level.

Pre-1945: decimal number as percentage, between 0 and 1.

% of buildings from the construction period that are renovated.

1945-1969: decimal number as percentage, between 0 and 1.

% of buildings from the construction period that are renovated.

1970-1979: decimal number as percentage, between 0 and 1.

% of buildings from the construction period that are renovated.

1980-1989: decimal number as percentage, between 0 and 1.

% of buildings from the construction period that are renovated.

1990-1999: decimal number as percentage, between 0 and 1.

% of buildings from the construction period that are renovated.

2000-2010: decimal number as percentage, between 0 and 1.

% of buildings from the construction period that are renovated.

Post-2010: decimal number as percentage, between 0 and 1.

% of buildings from the construction period that are renovated.