eneuron

optimising local energy communities

# eNeuron Database

The eNeuron Database is a collection of time series based on real and synthetic data that will support the simulation of the scenarios in the eNeuron project. It includes an important distribution of energy carriers and technologies to be used in the eNeuron scenarios. The time series are devoted to generation, consumption and storage, divided in several energy carriers (e.g. electricity, natural gas, hydrogen, heat and cooling) and technologies (e.g. photovoltaic, wind, CSP, diesel generators, CHP, Electrolizers, batteries). There is an intention for the eNeuron database to continue growing with new time series inputs during the eNeuron project duration. In what follows, a summary of the inputs available at this moment is presented.

| ID | Vector Type | Energy carrier | Technology/Type of consumption | Sector | Data Origin | Data resolution (min) | Time Horizon (months) |
|---|---|---|---|---|---|---|---|
| 001 | Generation | Electricity | Wind | Industrial | Synthetic | 60 | 12 |
| 002 | Generation | Electricity | Wind | Industrial | Real | 10 | 12 |
| 003 | Generation | Electricity | Wind | Independent | Real | 10 | 84 |
| 004 | Generation | Electricity | Photovoltaic | Independent | Synthetic | 60 | 360 |
| 005 | Generation | Electricity | CSP | Independent | Real | 10 | 60 |
| 006 | Generation | Electricity | Photovoltaic | Independent | Real | 10 | 60 |
| 007 | Generation | Electricity | Wind | Independent | Real | 15 | 24 |
| 008 | Generation | Electricity | Wind | Independent | Real | 15 | 12 |
| 009 | Generation | Electricity | Wind | Independent | Real | 15 | 12 |
| 010 | Generation | Electricity | Wind | Independent | Real | 15 | 120 |
| 011 | Generation | Electricity | Wind | Independent | Real | 15 | 156 |
| 012 | Generation | Electricity | Photovoltaic | Independent | Real | 15 | 120 |
| 013 | Generation | Electricity | Wind | Independent | Synthetic | 60 | 360 |

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| ID | Vector Type | Energy carrier | Technology/Type of consumption | Sector | Data Origin | Data resolution (min) | Time Horizon (months) |
|---|---|---|---|---|---|---|---|
| 014 | Generation | Electricity | Photovoltaic | Office | Real | 1 | 12 |
| 015 | Consumption | Electricity | Electric consumption | Educational | Real | 1 | 24 |
| 016 | Consumption | Electricity | Electric consumption | Educational | Real | 1 | 24 |
| 017 | Consumption | Electricity | Electric consumption | Educational | Real | 1 | 24 |
| 018 | Consumption | Electricity | Electric consumption | Educational | Real | 1 | 24 |
| 019 | Generation | Electricity | Hydro | Industrial | Real | 60 | 78 |
| 020 | Generation | Electricity | Hydro | Industrial | Real | 60 | 78 |
| 021 | Generation | Electricity | Hydro | Industrial | Real | 60 | 12 |
| 022 | Generation | Electricity | Hydro | Industrial | Real | 60 | 84 |
| 023 | Generation | Electricity | Hydro | Industrial | Real | 60 | 14 |
| 024 | Generation | Electricity | Hydro | Industrial | Real | 60 | 14 |
| 025 | Generation | Electricity | Hydro | Industrial | Real | 60 | 78 |
| 026 | Generation | Electricity | Hydro | Industrial | Real | 60 | 78 |
| 027 | Generation | Electricity | Hydro | Industrial | Real | 60 | 12 |
| 028 | Generation | Electricity | Hydro | Industrial | Real | 60 | 12 |
| 029 | Generation | Electricity | Hydro | Industrial | Real | 60 | 24 |
| 030 | Generation | Electricity | Hydro | Industrial | Real | 60 | 78 |
| 031 | Generation | Electricity | Hydro | Industrial | Real | 60 | 65 |
| 032 | Generation | Electricity | Hydro | Industrial | Real | 60 | 78 |
| 033 | Generation | Electricity | Hydro | Industrial | Real | 60 | 78 |
| 034 | Generation | Electricity | Hydro | Industrial | Real | 60 | 58 |
| 035 | Generation | Electricity | Hydro | Industrial | Real | 60 | 78 |
| 036 | Generation | Electricity | Photovoltaic | Educational | Real | 1 | 24 |
| 037 | Generation | Electricity | Photovoltaic | Educational | Real | 1 | 60 |
| 038 | Consumption | Electricity | Electric consumption | Residential | Synthetic | 60 | 12 |
| 039 | Consumption | Heat/Cooling | HVAC | Residential | Synthetic | 60 | 12 |
| 040 | Consumption | Electricity | Electric consumption | ALL | Synthetic | 60 | 12 |
| 041 | Consumption | Heat | HVAC | ALL | Synthetic | 60 | 12 |
| 042 | Consumption | Cooling | HVAC | ALL | Synthetic | 60 | 3 |
| 043 | Storage | Electricity | Battery | Educational | Synthetic | 60 | 12 |

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| ID | Vector Type | Energy carrier | Technology/Type of consumption | Sector | Data Origin | Data resolution (min) | Time Horizon (months) |
|---|---|---|---|---|---|---|---|
| 044 | Consumption | Electricity | Electric consumption | ALL | Real | 10 | 12 |
| 045 | Generation | Electricity | Diesel Generat. | ALL | Real | 10 | 12 |
| 046 | Generation | Electricity | Hydro | ALL | Real | 10 | 12 |
| 047 | Generation | Electricity | Wind | ALL | Real | 10 | 12 |
| 048 | Consumption | Electricity | Electric consumption | Educational | Real | 10 | 24 |
| 049 | Generation | Electricity | Photovoltaic | Educational | Real | 30 | 12 |
| 050 | Generation | Electricity | Photovoltaic | Educational | Real | 30 | 12 |
| 051 | Generation | Irradiance | Photovoltaic | ALL | Synthetic | 60 | 144 |
| 052 | Consumption | Electricity | Electric consumption | Educational | Real | 60 | 12 |
| 053 | Consumption | Natural Gas | Natural Gas consumption | Educational | Real | 60 | 12 |
| 054 | Consumption | Cooling | HVAC | Educational | Synthetic | 60 | 12 |
| 055 | Consumption | Heat | HVAC | Educational | Synthetic | 60 | 12 |
| 056 | Generation | Electricity | Hydro | Industrial | Real | 60 | 12 |
| 057 | Generation | Irradiance | Photovoltaic | Industrial | Real | 60 | 12 |
| 058 | Consumption | Natural Gas | Natural Gas consumption | Educational | Synthetic | 60 | 12 |
| 059 | Consumption | Natural Gas | Natural Gas consumption | Educational | Synthetic | 60 | 12 |
| 060 | Consumption | Natural Gas | Natural Gas consumption | Residential | Synthetic | 60 | 12 |
| 061 | Consumption | Natural Gas | Natural Gas consumption | Residential | Synthetic | 60 | 12 |
| 062 | Consumption | Hydrogen | Hydrogen consumption | Industrial | Synthetic | 60 | 12 |
| 063 | Generation | Electricity | Electrolyser | Industrial | Synthetic | 60 | 12 |
| 064 | Storage | Electricity | Battery | Industrial | Real | 15 | <1 |
| 065 | Generation | Irradiance | Photovoltaic | ALL | Real | 60 | 12 |
| 066 | Generation | Natural Gas | CHP | Industrial | Real | 1 | 0 |
| 067 | Consumption | Heat/Cooling | Electric boiler | Educational | Synthetic | 1 | 12 |
| 068 | Consumption | Heat/Cooling | Electric boiler | Educational | Synthetic | 1 | 12 |
| 069 | Consumption | Electricity | CHP | Educational | Synthetic | 1 | 12 |
| 070 | Generation | Electricity | Heat Pump | Educational | Synthetic | 1 | 12 |
| 071 | Generation | Electricity | CHP | Commercial | Synthetic | 1 | 12 |

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| ID | Vector Type | Energy carrier | Technology/Type of consumption | Sector | Data Origin | Data resolution (min) | Time Horizon (months) |
|---|---|---|---|---|---|---|---|
| 072 | Generation | Electricity | CHP | Commercial | Synthetic | 1 | 12 |
| 073 | Generation | Electricity | Photovoltaic | Commercial | Synthetic | 1 | 12 |
| 074 | Generation | Electricity | Photovoltaic | Commercial | Synthetic | 1 | 12 |
| 075 | Generation | Electricity | Photovoltaic | Commercial | Synthetic | 1 | 12 |
| 076 | Generation | Electricity | Photovoltaic | Educational | Synthetic | 1 | 12 |
| 077 | Consumption | Hydrogen | Fuell Cell | Industrial | Synthetic | 1 | 12 |
| 078 | Generation | Electricity | Photovoltaic | ALL | Synthetic | 1 | 12 |
| 079 | Consumption | Electricity | Electric consumption | Educational | Real | 1 | 12 |
| 080 | Generation | Electricity | Diesel Generat. | Educational | Synthetic | 1 | 12 |
| 081 | Generation | Electricity | Diesel Generat. | Office | Synthetic | 1 | 12 |
| 082 | Generation | Electricity | Photovoltaic | Commercial | Synthetic | 1 | 12 |
| 083 | Generation | Electricity | Photovoltaic | Commercial | Synthetic | 1 | 12 |
| 084 | Generation | Heat/Cooling | Thermal | Commercial | Synthetic | 1 | 12 |
| 085 | Consumption | Natural Gas | Natural Gas consumption | Health | Synthetic | 1 | 12 |
| 086 | Consumption | Natural Gas | Natural Gas consumption | Health | Synthetic | 1 | 12 |
| 087 | Storage | Electricity | Battery | Commercial | Synthetic | 1 | <1 |
| 088 | Storage | Electricity | Battery | Commercial | Synthetic | 1 | <1 |
| 089 | Consumption | Electricity | Electric Vehicle | Commercial | Synthetic | <1 | <1 |
| 090 | Generation | Electricity | Wind | Other | Real | 2 | 12 |
| 091 | Consumption | Electricity | PVE | Residential | Real | 30 | 12 |
| 092 | Consumption | Electricity | Chiller | ALL | Real | 30 | 12 |
| 093 | Consumption | Heat | HVAC | ALL | Real | 60 | 12 |

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