Output file columns

Variable	Type	Unit	Description
Country	String	-	Name of the country
Admin1	String	-	Admin level 1 name
X_deg	Float	degrees	Longitude
Y_deg	Float	degrees	Latitude
GridCellArea	Float	sq. km	area of population settlement
id	Integer	indicator	ID given to each cluster
Pop	Float	people	Population in each cluster for the start year as given by the GIS dataset
NightLights	Integer	nW cm−2 sr−1	Values of light intensity
GHI	Float	kWh/km^2	Solar irradiation
Travelhours	Float	hours	Distance to nearest town in hours
SubstationDist	Float	km	Distance to nearest substation
RoadDist	Float	km	Distance to nearest road
CurrentMVLineDist	Float	km	Distance to nearest existing ML line
PlannedMVLineDist	Float	km	Distance to nearest planned MV line
CurrentHVLineDist	Float	km	Distance to nearest current HV line
PlannedHVLineDist	Float	km	Distance to nearest planned HV line
HydropowerFID	Integer	indicator	ID given to each potential site
Hydropower	Float	kW	Small scale hydropower potential
HydropowerDist	Float	km	Distance to potential hydropower point
Cat_1	Integer	-	Number of category 1 health facilities
Cat_2	Integer	-	Number of category 2 health facilities
Cat_3	Integer	-	Number of category 3 health facilities
Unc	Integer	-	Number of unclassified schools
Prim	Integer	-	Number of primary schools
Sec	Integer	-	Number of secondary schools
TransformerDist	Float	km	Distance to nearest service transformer
IsUrban	Integer	0 for rural 1 for urban	All 0 after extraction, urban/rural split gets assigned in the algorithm
ResidentialDemandTierCustom	Float	kWh/capita/year	Indicative residential electricity demand target
PerCapitaDemand	Float	kWh/capita/year	Indicative residential electricity demand target
HealthDemand	Float	kWh/capita/year	Indicative electricity demand for health facilities
EducationDemand	Float	kWh/capita/year	Indicative electricity demand for educational facilities
AgriDemand	Float	kWh/capita/year	Indicative electricity demand for agricultural processes
CommercialDemand	Float	kWh/capita/year	Indicative electricity demand target for commercial activity

Commercial_Multiplier	Float	0 to 1	Commercial demand, measured as a share of the residential demand (used instead of the CommercialDemand variable).
GridPenalty	Float	1 to 5	Indicator suggesting an additional cost to grid extension costs reflecting geospatial suitability
WindCF	Float	%	Estimated capacity factor for wind technologies; certain technical parameters are taken into consideration
PopStartYear	Float	people	Population in the base year of the analysis
ElecPopCalib	Float	people	Calibrated version of ElecPop
Pop2025	Float	people	Projected population at the intermediate year (2025)
Pop2030	Float	People	Projected population at the end year of the analysis (2030)
Pop2020	Float	people	Population in the base year of the analysis (2020)
ElecStart	Integer	0-1	0 if settlement not electrified today; 1 if electrified today; Retrieved from calibration algorithm
GridDistCalibElec	Float	km	Distance to nearest grid element (after calibration)
FinalElecCode2020	Integer	0-7	Code defining type of technology providing electricity if electrified in base year
NumPeoplePerHH	Float	people	Number of people in household; value for urban or rural respective to how the settlement is characterized
NewConnections2025	Float	people	Total population in step minus non electrified population in cluster
EnergyPerSettlement2025	Float	kWh by 2030	Estimated electricity demand target in the settlement based on new connections
MG_Hydro2025	Float	USD/kWh	LCOE estimated for mini-grid hydro in the step year
MG_PV_Hybrid2025	Float	USD/kWh	LCOE estimated for mini-grid pv/diesel/battery hybrid in the step year
MG_Wind_Hybrid2025	Float	USD/kWh	LCOE estimated for mini-grid wind/diesel/battery hybrid in the step year
SA_PV2025	Float	USD/kWh	LCOE estimated for stand-alone diesel in the step year
Grid2025	Float	USD/kWh	LCOE estimated for the Grid in the step year
MinGridDist2025	Float	km	Indicating the distance of the grid, if settlement gets grid electrified in the process
ElectrificationOrder2025	Integer	1-X	Number indicating at which electrification loop is getting connected by grid
MinimumOverall2025	String	tech abbreviation	Abbreviation defining type of off-grid technology providing electricity in the step year
MinimumOverallLCOE2025	Float	USD/kWh	LCOE of the least cost off grid option selected
MinimumOverallCode2025	Integer	1 - 7 code	Code defining type of off-grid technology providing electricity in the step year
InvestmentCost2025	Float	USD	Total investment if electrification is achieved
InvestmentCapita2025	Float	USD/capita	Estimated investment per capita if electrification is achieved
ElecStatusIn2025	Integer	0-1	Final electrification status in the step year (after running prioritization algorithm)
FinalElecCode2025	Integer	1 - 7 code	Final tech code for settlements that get electricity in the step year
NewCapacity2025	Float	kW	Additional capacity for the least cost technology identified in the step year
NewConnections2030	Float	people	Total population minus non electrified population in cluster

EnergyPerSettlement2030	Float	kWh	Estimated electricity demand target in the settlement based on new connections
MG_Hydro2030	Float	USD/kWh	LCOE estimated for mini-grid hydro in the step year
MG_PV_Hybrid2030	Float	USD/kWh	LCOE estimated for mini-grid pv in the step year
MG_Wind_Hybrid2030	Float	USD/kWh	LCOE estimated for mini-grid wind in the step year
SA_PV2030	Float	USD/kWh	LCOE estimated for stand-alone diesel in the step year
Grid2030	Float	USD/kWh	LCOE estimated for the grid
MinGridDist2030	Float	km	Indicating the distance of the grid, if settlement gets grid electrified in the process
ElectrificationOrder2030	Integer	1-X	Number indicating at which electrification loop is getting connected by grid
MinimumOverall2030	Integer	String	Abbreviation defining type of off-grid technology providing electricity in the step year
MinimumOverallLCOE2030	Float	$/kWh	LCOE of the least cost off grid option selected
MinimumOverallCode2030	Integer	1 - 7	Code defining type of off-grid technology providing electricity in the step year
InvestmentCapita2030	Float	USD/capita	Estimated investment per capita if electrification is achieved
InvestmentCost2030	Float	USD	Total investment if electrification is achieved
ElecStatusIn2030	Integer	0-1	Final electrification status in the step year (after running prioritization algorithm)
FinalElecCode2030	Integer	1-7	Final tech code for settlements that get electricity in the step year
NewCapacity2030	Float	kW	Additional capacity for the least cost technology identified in the step year
MVConnectDist	Float	km	MV line distance to closest HV line. 0 if the settlement is not connected to the grid.
TotalEnergyPerCell	Float	kWh/year	Total electricity demand (all sectors considered) in the settlement by the end year of the analysis
Tier	Int	1-5	Tier classification of the consumption per capita in the settlement