Package: mrcommonsenergy (via r-universe)

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Type Package

Title Preprocessing functions for REMIND and other energy models (no landuse data)

Version 0.3.3

Date 2026-06-27

Description Preprocessing functions for REMIND and other energy models (buildings, transport, industry) not using landuse data.

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URL https://github.com/pik-piam/mrcommonsenergy

BugReports https://github.com/pik-piam/mrcommonsenergy/issues

Depends GDPuc (>= 1.3.0), madrat (>= 3.10.0), magclass (>= 3.17), mrdrivers (>= 7.1.1), R (>= 2.10.0)

Imports data.table, dplyr, magrittr, openxlsx, quitte, tibble, tidyr, readxl, rlang

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RemoteRef HEAD

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Contents

`calcIOEdgeBuildings` *calcIOEdgeBuildings*

Description

Calculates buildings-related energy flows from the IEA energy balances. 'output_EDGE_buildings' is a key input to EDGE-Buildings providing the historic final energy demand from buildings. 'output_EDGE' does the same for buildings and industry together.

Usage

```
calcIOEdgeBuildings(
  subtype = c("output_EDGE", "output_EDGE_buildings"),
  ieaVersion = c("default", "latest")
)
```

Arguments

`subtype`	Data subtype. See default argument for possible values.
`ieaVersion`	Release version of IEA data, either 'default' (vetted and used in REMIND) or 'latest'.

Value

IEA data as MAgPIE object aggregated to country level

Author(s)

Pascal Sauer, Anastasis Giannousakis, Robin Hasse

Examples

```
## Not run:
a <- calcOutput("IOEdgeBuildings", subtype = "output_EDGE_buildings")

## End(Not run)
```

`convertEEA_EuropeanEnvironmentAgency`
Convert European Environment Agency (EEA) data

Description

Read-in European Environment Agency (EEA) data on ETS emissions as magclass object

Usage

```
convertEEA_EuropeanEnvironmentAgency(x, subtype)
```

Arguments

x	MAgPIE object to be converted
subtype	data subtype. Either "ETS", "historical", "projections", or "projections-detailed"

Value

magpie object of European Environment Agency (EEA) ETS emissions (GtCO2)

Author(s)

Renato Rodrigues, Robin Hasse

Examples

```
## Not run:
a <- readSource(type = "EEA_EuropeanEnvironmentAgency", subtype = "ETS")

## End(Not run)
```

convertEU_ReferenceScenario *Convert EU Reference Scenario*

Description

Converts EU Reference Scenario magpie object into appropriate form for the REMIND model

Usage

```
convertEU_ReferenceScenario(x, subtype)
```

Arguments

x	EU Reference Scenario magpie object derived from readEU_ReferenceScenario function
subtype	data subtype. Either "techAssump.*", "2016" or "2020"

Value

converted EU Reference Scenario magpie object

Author(s)

Renato Rodrigues, Falk Benke, Robin Hasse

Examples

```
## Not run:
test <- readSource("EU_ReferenceScenario", subtype = "2020", convert = TRUE)

## End(Not run)
```

convertEurostat *Read Eurostat historical emissions (env_air_gge)*

Description

Read Eurostat historical emissions (env_air_gge)

Usage

```
convertEurostat(x, subtype)
```

Arguments

x	MAgPIE object to be converted
subtype	'emissions' for original Eurostat emissions split, 'MACCemi' for MACC historical emissions, or 'sectorEmi' for sector specific emissions, or 'latest' for most up-to-date data

Value

A MAgPIE object containing the Eurostat historical emissions (MtCO2)

Author(s)

Renato Rodrigues

Examples

```
## Not run:
a <- convertEurostat(x, subtype = "emissions")

## End(Not run)
```

---

convertIEA *Convert IEA*

Description

Convert IEA energy data to data on ISO country level.

Usage

```
convertIEA(x, subtype)
```

Arguments

x	MAgPIE object containing IEA values at IEA mixed country-region resolution
subtype	data subtype. Either "EnergyBalances", "EnergyBalances-latest", or "Emissions"

Value

IEA data as MAgPIE object aggregated to country level

Author(s)

Anastasis Giannousakis, Renato Rodrigues, Falk Benke

convertJRC_IDEES *Convert JRC IDEES data*

Description

Missing data for EU-28 countries is added, by distributing the difference of EU28 and the sum of country-values based on countries share in EU-28 GDP.

Usage

```
convertJRC_IDEES(x, subtype)
```

Arguments

x	a magpie object
subtype	character, subtype of readJRC_IDEES()

Value

A magpie object.

Author(s)

Michaja Pehl, Robin Hasse

convertUNFCCC *Convert UNFCCC data*

Description

Convert UNFCCC data

Usage

```
convertUNFCCC(x)
```

Arguments

x	A magpie object returned from readUNFCCC().

Value

A magpie object.

Author(s)

Falk Benke

readEEA_EuropeanEnvironmentAgency

Read European Environment Agency (EEA) data

Description

Read-in European Environment Agency (EEA) data on ETS emissions as magclass object

Usage

```
readEEA_EuropeanEnvironmentAgency(subtype)
```

Arguments

subtype	data subtype. Either "ETS", "ESR", "total", "sectoral", "projections", or "projections-detailed"

Value

magpie object of European Environment Agency (EEA) ETS emissions (GtCO2)

Author(s)

Renato Rodrigues, Falk Benke, Robin Hasse

Examples

```
## Not run:
a <- readSource(type = "EEA_EuropeanEnvironmentAgency", subtype = "ETS")

## End(Not run)
```

readEU_ReferenceScenario

Read EU Reference Scenario

Description

Read EU Reference Scenario .xlsx file as magpie object

Usage

```
readEU_ReferenceScenario(subtype)
```

Arguments

subtype	data subtype. Either "techAssump.*", "2016" or "2020"

Value

magpie object of EU reference scenario data by country. Units follow REMIND report conventions and conversion factor is defined in EU_ReferenceScenario2REMIND.xlsx file.

Author(s)

Renato Rodrigues, Falk Benke, Robin Hasse

Examples

```
## Not run:
test <- readSource("EU_ReferenceScenario", subtype = "2020", convert = FALSE)

## End(Not run)
```

---

readEurostat *Read Eurostat historical emissions (env_air_gge)*

Description

Read-in Eurostat historical emissions csv files as magclass object

Usage

```
readEurostat(subtype = "emissions")
```

Arguments

subtype	'emissions' for original Eurostat emissions split, 'MACCemi' for MACC historical emissions, or 'sectorEmi' for sector specific emissions, or 'latest' for most up-to-date data

Value

magpie object of Eurostat historical emissions (MtCO2)

Author(s)

Renato Rodrigues

Examples

```
## Not run:
a <- readSource(type = "Eurostat", subtype = "emissions")

## End(Not run)
```

`readIEA` *Read IEA*

Description

Read-in an IEA csv file as magpie object

Usage

```
readIEA(subtype)
```

Arguments

`subtype`	data subtype. Either "EnergyBalances", "EnergyBalances-latest", or "Emissions".

- "EnergyBalances": IEA energy balances until 2022 (2023 incomplete), data updated in Sep 2024, the current default for REMIND input data
- "EnergyBalances-latest": IEA energy balances until 2022 (2023 incomplete), data updated in Sep 2024, currently same as default

Value

magpie object of the IEA

Author(s)

Anastasis Giannousakis, Lavinia Baumstark, Renato Rodrigues, Falk Benke

See Also

`madrat::readSource()`

Examples

```
## Not run:
a <- readSource(type = "IEA", subtype = "EnergyBalances")

## End(Not run)
```

readJRC_IDEES *Read JRC IDEES*

Description

Read the IDEES data base from JRC #nolint

Usage

```
readJRC_IDEES(subtype)
```

Arguments

subtype	one of • 'Emission': read worksheets from the Emission Balance files • 'Energy': read worksheets from the Energy Balance files • 'Industry': read worksheets from the Industry files • 'Transport': read worksheets from the Transport files • 'MBunkers': read worksheets from the Bunkers files • 'Residential': read worksheets from the Residential files • 'Tertiary': read worksheets from the Tertiary (Services and Agriculture) files append '_2021' to get the updated data from 2021 (only available for some sectors)

Value

A magpie object.

Author(s)

Michaja Pehl, Falk Benke, Robin Hasse

readUNFCCC *Read UNFCCC data*

Description

Read UNFCCC data

Usage

```
readUNFCCC()
```

Author(s)

Falk Benke

`toolAggregateCustomRegs` *Aggregate regions without regional aggregations such as global sum*

Description

Aggregate regional data, but if regional aggregations exist, discard the automatically aggregated values and replace them with source data.

Usage

```
toolAggregateCustomRegs(
  x,
  agg,
  rel,
  to = NULL,
  removeAllAgg = TRUE,
  regs = "GLO"
)
```

Arguments

`x`	a magclass object in country resolution
`agg`	magclass object supplying explicit regional aggregates
`rel`	aggregation mapping for `toolAggregate`
`to`	aggregation target for `toolAggregate`
`removeAllAgg`	decide whether to exclude all aggregated data or keep those (variables/periods) that are not overwritten by data from agg object
`regs`	one or multiple names of aggregated regions to be removed/overwritten

Value

magclass object

Author(s)

Falk Benke, Pascal Weigmann

toolGetIEAYear *Returns the year associated with a given ieaVersion*

Description

Returns the year associated with a given ieaVersion

Usage

```
toolGetIEAYear(ieaVersion)
```

Arguments

ieaVersion	Release version of IEA data, either 'default' (vetted and used in REMIND) or 'latest'.

Author(s)

Falk Benke

toolSplitBiomass *Split Biomass into modern and traditional*

Description

We assume that below a given GDP/cap level, all biomass is traditional and above a higher limit, all biomass is modern with a linear transition between the limits.

Usage

```
toolSplitBiomass(
  x,
  gdppop,
  split = "biomass",
  into = c("biotrad", "biomod"),
  dim = 3.1,
  limits = c(12300, 18500)
)
```

Arguments

x	MagPIE object including biomass data
gdppop	MagPIE object with GDP/cap data
split	character, name of item to split
into	character vector of length two with the names of the split items
dim	dimension of x with the item to split
limits	numeric vector of length two with the corresponding GDP/cap limits. The default values used to be 10k and 15k USD/cap converted from 2005 to 2017 dollars.

Value

MagPIE object including split biomass data

Author(s)

Robin Hasse

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