Package: mrtransport (via r-universe)

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Title Input data generation for the EDGE-Transport model

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Description The mrtransport package contains data preprocessing for the EDGE-Transport model.

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RemoteUrl https://github.com/pik-piam/mrtransport

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Contents

`mrtransport-package` *mrtransport: Input data generation for the EDGE-Transport model*

Description

The mrtransport package contains data preprocessing for the EDGE-Transport model.

Author(s)

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Authors:

- Jarusch jarusch.muessel@pik-potsdam.de Muessel
- Alois Dirnaichner

See Also

Useful links:

- https://github.com/pik-piam/mrtransport

calcEdgeTransportSAinputs

Provide EDGE-Transport input parameters

Description

Provide EDGE-Transport input parameters

Usage

```
calcEdgeTransportSAinputs(subtype, SSPscen = "SSP2EU", IEAharm = TRUE)
```

Arguments

subtype	one of the parameters required for EDGE-T SA
SSPscen	shared socioeconomic pathway
IEAharm	switch IEA harmonization of energy intensity on and off

Author(s)

Johanna Hoppe

convertEurostatEnergyCountryDataSheets

Convert Eurostat road transportation data to iso country.

Description

Convert Eurostat road transportation data to iso country.

Usage

```
convertEurostatEnergyCountryDataSheets(x, subtype)
```

Arguments

x	a magpie data object
subtype	One of the possible subtypes, see default argument.

Value

magpie object

Author(s)

Johanna Hoppe

See Also

readSource

Examples

```
## Not run:
a <- readSource("Eurostat")

## End(Not run)
```

---

convertGCAM *Convert GCAM transportation data to iso country level.*

Description

Convert GCAM transportation data to iso country level.

Usage

```
convertGCAM(x, subtype)
```

Arguments

x	a magpie data object
subtype	One of the possible subtypes, see default argument.

Value

magpie object

Author(s)

Johanna Hoppe, Alois Dirnaichner

See Also

readSource

Examples

```
## Not run:
a <- readSource("GCAM", subtype = "esDemand")

## End(Not run)
```

convertPSI *Convert PSI data to iso country.*

Description

Convert PSI data to iso country.

Usage

```
convertPSI(x, subtype)
```

Arguments

x	a magpie data object
subtype	One of the possible subtypes, see default argument.

Value

magpie object

Author(s)

Johanna Hoppe

See Also

readSource

Examples

```
## Not run:
a <- readSource("PSI", subtype = "costs")

## End(Not run)
```

convertTRACCS *Convert TRACCS road transportation data to iso country.*

Description

Convert TRACCS road transportation data to iso country.

Usage

```
convertTRACCS(x, subtype)
```

Arguments

x	a magpie data object
subtype	One of the possible subtypes, see default argument.

Value

magpie object

Author(s)

Johanna Hoppe, Alois Dirnaichner

See Also

readSource

Examples

```
## Not run:
a <- readSource("TRACCS")

## End(Not run)
```

---

convertTransportPurchasePriceSubsidies

Converts transport subsidies data

Description

Converts transport subsidies data

Usage

```
convertTransportPurchasePriceSubsidies(x)
```

Arguments

x	MAgPIE object to be converted

Value

A MAgPIE object containing transport subsidies per technology

Author(s)

Caroline Cronjaeger

Examples

```
## Not run:  a <- convertTransportSubsidies(x)
```

---

convertUCD *Convert UCD road transportation data to iso country.*

Description

Convert UCD road transportation data to iso country.

Usage

```
convertUCD(x, subtype)
```

Arguments

x	a magpie data object
subtype	One of the possible subtypes, see default argument.

Value

magpie object

Author(s)

Johanna Hoppe, Alois Dirnaichner

See Also

readSource

Examples

```
## Not run:
a <- readSource("UCD")

## End(Not run)
```

correctGCAM *Correct GCAM road transportation data to iso country.*

Description

Correct GCAM road transportation data to iso country.

Usage

```
correctGCAM(x, subtype)
```

Arguments

x	a magpie data object
subtype	One of the possible subtypes, see default argument.

Value

magclass object

Author(s)

Johanna Hoppe, Alois Dirnaichner

See Also

readSource

Examples

```
## Not run:
a <- readSource("GCAM", subtype="histESdemand")

## End(Not run)
```

readEurostatEnergyCountryDataSheets *Read Eurostat data.*

Description

Read Eurostat data.

Usage

```
readEurostatEnergyCountryDataSheets(subtype = c("feDemand", "LDVfleet"))
```

Arguments

subtype	One of the possible subtypes, see default argument.

Value

magclass object

Author(s)

Johanna Hoppe

See Also

readSource

Examples

```
## Not run:
a <- readSource("EurostatEnergyCountryDataSheets")

## End(Not run)
```

---

readGCAM *Read GCAM transportation data.*

Description

Read GCAM transportation data.

Usage

```
readGCAM(
  subtype = c("energyIntensity", "loadFactor", "histESdemand", "speedMotorized",
    "speedNonMotorized", "valueOfTimeMultiplier")
)
```

Arguments

subtype	One of the possible subtypes, see default argument.

Value

magpie object

Author(s)

Johnna Hoppe, Alois Dirnaichner

See Also

readSource

Examples

```
## Not run:
a <- readSource("GCAM", subtype = "histEDsemand")

## End(Not run)
```

---

readPSI *Read PSI data.*

Description

Read PSI data.

Usage

```
readPSI(subtype = c("CAPEX", "energyIntensity"))
```

Arguments

subtype	One of the possible subtypes, see default argument.

Value

magpie object

Author(s)

Johnna Hoppe

See Also

readSource

Examples

```
## Not run:
a <- readSource("PSI", subtype = "energyIntensity")

## End(Not run)
```

readTRACCS *Read TRACCS road transportation data.*

Description

Read TRACCS road transportation data.

Usage

```
readTRACCS(
  subtype = c("fuelEnDensity", "roadFuelConsumption", "energyIntensity", "loadFactor",
    "annualMileage", "roadESdemand", "histESdemand", "railFeDemand", "vehPopulation")
)
```

Arguments

subtype	One of the possible subtypes, see default argument.

Value

magclass object

Author(s)

Alois Dirnaichner

See Also

readSource

Examples

```
## Not run:
a <- readSource("TRACCS")

## End(Not run)
```

readTransportPurchasePriceSubsidies *Read transport subsidies data*

Description

Read-in transport subsidies csv files as magclass object

Usage

```
readTransportPurchasePriceSubsidies()
```

Value

magpie object of the transport subsidies for BEV, FCEV and PHEV (euros/car) for private and legal entities

Author(s)

Caroline Cronjaeger

See Also

readSource

Examples

```
## Not run:  a <- readSource(type="TransportSubsidies")
```

readUCD *Read UCD road transportation data.*

Description

Read UCD road transportation data.

Usage

```
readUCD(
  subtype = c("energyIntensity", "feDemand", "loadFactor", "annualMileage",
    "nonMotorizedDemand", "speed", "costs")
)
```

Arguments

subtype	One of the possible subtypes, see default argument.

Value

magclass object

Author(s)

Johanna Hoppe, Alois Dirnaichner

See Also

readSource

Examples

```
## Not run:
a <- readSource("UCD")

## End(Not run)
```

---

toolAdjustAnnualMileage

Perform parameter specific adjustments on the input data

Description

Perform parameter specific adjustments on the input data

Usage

```
toolAdjustAnnualMileage(dt, completeData, filter, ariadneAdjustments = TRUE)
```

Arguments

dt	calculated raw data without adjustments
completeData	All combinations of region, period, univocalName and technology in EDGE-T decision tree
filter	list of filters for specific branches in the upper decision tree, containing all associated univocalNames
ariadneAdjustments	switch on and off adjustments according to ARIADNE model intercomparison in 2022

Value

a quitte object

Author(s)

Johanna Hoppe

toolAdjustCAPEXother *Perform parameter specific adjustments on the input data*

Description

Perform parameter specific adjustments on the input data

Usage

```
toolAdjustCAPEXother(dt, ISOcountries, yrs, completeData, GDPpcMER, filter)
```

Arguments

dt	calculated raw data without adjustments
ISOcountries	list of iso countries
yrs	temporal resolution of EDGE-T model
completeData	All combinations of region, period, univocalName and technology in EDGE-T decision tree
GDPpcMER	GDP per capita based on market exchange rate
filter	list of filters for specific branches in the upper decision tree, containing all associated univocalNames

Value

a quitte object

Author(s)

Johanna Hoppe

toolAdjustCAPEXtrackedFleet *Perform parameter specific adjustments on the input data*

Description

Perform parameter specific adjustments on the input data

Usage

```
toolAdjustCAPEXtrackedFleet(
  dt,
  ISOcountries,
  yrs,
  completeData,
  GDPpcMER,
  filter
)
```

Arguments

dt	calculated raw data without adjustments
ISOcountries	list of iso countries
yrs	temporal resolution of EDGE-T model
completeData	All combinations of region, period, univocalName and technology in EDGE-T decision tree
GDPpcMER	GDP per capita based on market exchange rate
filter	list of filters for specific branches in the upper decision tree, containing all associated univocalNames

Value

a quitte object

Author(s)

Johanna Hoppe

---

toolAdjustEnergyIntensity

Perform parameter specific adjustments on the input data

Description

Perform parameter specific adjustments on the input data

Usage

```
toolAdjustEnergyIntensity(
  dt,
  regionTRACCS,
  TrendsEnIntPSI,
  filter,
  ariadneAdjustments = TRUE
)
```

Arguments

dt	calculated raw data without adjustments
regionTRACCS	iso countries included in TRACCS database
TrendsEnIntPSI	Energy intensity trends from PSI
filter	list of filters for specific branches in the upper decision tree, containing all associated univocalNames
ariadneAdjustments	optional parameter adjustements according to ARIADNE model intercomparison in 2022

Value

a quitte object

Author(s)

Johanna Hoppe

---

toolAdjustEsDemand *Perform parameter specific adjustments on the input data*

Description

Perform parameter specific adjustments on the input data

Usage

```
toolAdjustEsDemand(dt, mapIso2region, completeData, filter)
```

Arguments

dt	calculated raw data without adjustments
mapIso2region	map iso countries to regions
completeData	All combinations of region, period, univocalName and technology in EDGE-T decision tree
filter	list of filters for specific branches in the upper decision tree, containing all associated univocalNames

Value

a quitte object

Author(s)

Johanna Hoppe

toolAdjustLoadFactor *Perform parameter specific adjustments on the input data*

Description

Perform parameter specific adjustments on the input data

Usage

```
toolAdjustLoadFactor(dt, completeData, TRACCScountries, filter)
```

Arguments

dt	calculated raw data without adjustments
completeData	All combinations of region, period, univocalName and technology in EDGE-T decision tree
TRACCScountries	countries included in TRACCS database
filter	list of filters for specific branches in the upper decision tree, containing all associated univocalNames

Value

a quitte object

Author(s)

Johanna Hoppe

toolAdjustNonFuelOPEXother *Perform parameter specific adjustments on the input data*

Description

Perform parameter specific adjustments on the input data

Usage

```
toolAdjustNonFuelOPEXother(dt, ISOcountries, yrs, completeData, filter)
```

Arguments

dt	calculated raw data without adjustments
ISOcountries	list of iso countries
yrs	temporal resolution of EDGE-T model
completeData	All combinations of region, period, univocalName and technology in EDGE-T decision tree
filter	list of filters for specific branches in the upper decision tree, containing all associated univocalNames

Value

a quitte object

Author(s)

Johanna Hoppe

---

toolAdjustNonFuelOPEXtrackedFleet

Perform parameter specific adjustments on the input data

Description

Perform parameter specific adjustments on the input data

Usage

```
toolAdjustNonFuelOPEXtrackedFleet(dt, yrs, completeData, filter)
```

Arguments

dt	calculated raw data without adjustments
yrs	temporal resolution of EDGE-T model
completeData	All combinations of region, period, univocalName and technology in EDGE-T decision tree
filter	list of filters for specific branches in the upper decision tree, containing all associated univocalNames

Value

a quitte object

Author(s)

Johanna Hoppe

`toolAdjustSpeedOfModes` *Perform parameter specific adjustments on the input data*

Description

Perform parameter specific adjustments on the input data

Usage

```
toolAdjustSpeedOfModes(dt, completeData, filter)
```

Arguments

`dt`	calculated raw data without adjustments
`completeData`	All combinations of region, period, univocalName and technology in EDGE-T decision tree
`filter`	list of filters for specific branches in the upper decision tree, containing all associated univocalNames

Value

a quitte object

Author(s)

Johanna Hoppe

`toolAdjustValueOfTimeMultiplier` *Perform parameter specific adjustments on the input data*

Description

Perform parameter specific adjustments on the input data

Usage

```
toolAdjustValueOfTimeMultiplier(dt, completeData, filter)
```

Arguments

`dt`	calculated raw data without adjustments
`completeData`	All combinations of region, period, univocalName and technology in EDGE-T decision tree
`filter`	list of filters for specific branches in the upper decision tree, containing all associated univocalNames

Value

a quitte object

Author(s)

Johanna Hoppe

`toolAggregateVehicleTypes` *Aggregate vehicle types so that vehicle types that are only available in certain iso countries of a region are not lost and still appear in the aggregated region*

Description

Aggregate vehicle types so that vehicle types that are only available in certain iso countries of a region are not lost and still appear in the aggregated region

Usage

```
toolAggregateVehicleTypes(...)
```

Arguments

...	magpie object to be aggregated

Value

a magpie object

Author(s)

Johanna Hoppe

`toolIEAharmonization` *Harmonize the energy intensities to match the IEA energy balances regarding final energy.*

Description

We provide energy service trajectories. IEA energy balances have to be met and are not consistent with GCAM intensities and energy service trajectories. Therefore we have to adjust energy intensities and set the energy service demand to zero, where the IEA does not report the energy service demand

Usage

```
toolIEAharmonization(...)
```

Arguments

...	data to harmonize: Either the energy intensity or the energy service demnand

---

toolMergeEnergyIntensity *Merge source data for energy intensity*

Description

Merge source data for energy intensity

Usage

```
toolMergeEnergyIntensity(data, filterEntries, countriesTRACCS)
```

Arguments

data	source data
filterEntries	helper to filter for univocalNames
countriesTRACCS	countries included in the TRACCS database

Author(s)

Johanna Hoppe

---

toolMergeHistESdemand *Merge source data for historical energy service demand*

Description

Merge source data for historical energy service demand

Usage

```
toolMergeHistESdemand(data, filterEntries, countriesTRACCS)
```

Arguments

`data`	source data
`filterEntries`	helper to filter for univocalNames
`countriesTRACCS`	countries included in the TRACCS database

Author(s)

Johanna Hoppe

`toolPrepareEurostatEnergyCountryDataSheets` *Perform source specific transformations to ensure a compatible structure.*

Description

Map the source categories to the EDGE-T categories. Apply the full structure of the decision tree.

Usage

```
toolPrepareEurostatEnergyCountryDataSheets(x)
```

Arguments

`x`	the input data read via readSource, a magpie object

Value

a quitte object

Author(s)

Johanna Hoppe

`toolPrepareGCAM` *Perform source specific transformations to ensure a compatible structure.*

Description

Map the source categories to the EDGE-T categories. Apply the full structure of the decision tree.

Usage

```
toolPrepareGCAM(x, subtype)
```

Arguments

`x`	the input data read via readSource, a magpie object
`subtype`	one of the different EDGE-T inputdata subtypes

Value

a quitte object

Author(s)

Johanna Hoppe

`toolPreparePSI` *Perform source specific transformations to ensure a compatible structure.*

Description

Map the source categories to the EDGE-T categories. Apply the full logit structure.

Usage

```
toolPreparePSI(x)
```

Arguments

`x`	the input data read via readSource, a magpie object

Value

a quitte object

Author(s)

Johanna Hoppe

`toolPreparePurchasePriceSubsidies` *Perform source specific transformations to ensure a compatible structure.*

Description

Map the source categories to the EDGE-T categories. Apply the full structure of the decision tree.

Usage

```
toolPreparePurchasePriceSubsidies(x)
```

Arguments

x	the input data read via readSource, a magpie object

Value

a quitte object

Author(s)

Caroline Cronjaeger

`toolPrepareTRACCS` *Perform source specific transformations to ensure a compatible structure.*

Description

Map the source categories to the EDGE-T categories. Apply the full structure of the decision tree.

Usage

```
toolPrepareTRACCS(x, subtype)
```

Arguments

x	the input data read via readSource, a magpie object
subtype	one of the different EDGE-T inputdata subtypes

Value

a quitte object

Author(s)

Johanna Hoppe

`toolPrepareUCD` *Perform source specific transformations to ensure a compatible structure.*

Description

Map the source categories to the EDGE-T categories. Apply the full structure of the decision tree.

Usage

```
toolPrepareUCD(x, subtype)
```

Arguments

`x`	the input data read via readSource, a magpie object
`subtype`	one of the different EDGE-T inputdata subtypes

Value

a quitte object

Author(s)

Johanna Hoppe

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