

# Package: edgeTransport (via r-universe)

September 2, 2024

**Title** Prepare EDGE Transport Data for the REMIND model

**Version** 2.3.0

**Description** EDGE-T is a fork of the GCAM transport module <https://jgcri.github.io/gcam-doc/energy.html#transportation> with a high level of detail in its representation of technological and modal options. It is a partial equilibrium model with a nested multinomial logit structure and relies on the modified logit formulation. Most of the sources are not publicly available. PIK-internal users can find the sources in the distributed file system in the folder ``/p/projects/rd3mod/inputdata/sources/EDGE-Transport-Standalone``.

**Depends** R (>= 3.5.0), data.table (>= 1.11.0), mrtransport (>= 0.6.0)

**License** GPL-3

**URL** <https://github.com/pik-piam/edgeTransport>

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**Suggests** testthat (>= 3.0.0), knitr, markdown, covr

**Repository** <https://pik-piam.r-universe.dev>

**RemoteUrl** <https://github.com/pik-piam/edgeTransport>

**RemoteRef** HEAD

**RemoteSha** 9a9882e02871ba8d3758ad070b54b59dfbca03b5

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---

calcEdgeTransportSA    *Generate EDGE-Transport Input Data for the REMIND model, madrat interface.*

---

### Description

calcEdgeTransportSA() is a wrapper for toolEdgeTransportSA() to make use of madrat caching.

### Usage

```
calcEdgeTransportSA(
  SSPscen,
  transportPolScen,
  isICEban = FALSE,
  demScen = "default",
 .gdxPath = NULL,
  outputFolder = NULL,
  isStored = FALSE,
  isTransportReported = TRUE,
  isTransportExtendedReported = FALSE,
  isREMINDinputReported = FALSE,
  isAnalyticsReported = FALSE
)
```

### Arguments

SSPscen	SSP or SDP scenario
transportPolScen	EDGE-T transport policy scenario
isICEban	optional enabling of ICE ban
demScen	Demand scenario, used to apply reduction factors on total demands from the regression
.gdxPath	Path to a GDX file to load price signals from a REMIND run
outputFolder	Path to folder for storing output data
isStored	Optional saving of intermediate RDS files
isTransportReported	Optional transport reporting in MIF format
isTransportExtendedReported	Optional extension of transport reporting providing more detailed variables
isREMINDinputReported	Optional reporting of REMIND input data
isAnalyticsReported	Optional reporting of analytics data (e.g. variables over iterations)

**Value**

Transport input data for REMIND

**Author(s)**

Jarusch Muessel, Johanna Hoppe

---

calculateShares	<i>Calculate shares based on discrete choice model.</i>
-----------------	---

---

**Description**

Function works for the use of generic preferences as well as for inconvenience costs. If no preferences are provided the function sets them to one which is equivalent to pure description by inconvenience costs.

**Usage**

```
calculateShares(totPrice, lambda, pref = NULL)
```

**Arguments**

totPrice	total price of an option in a branch of the decision tree
lambda	exponent that determines the price sensitivity of the decision model
pref	optional use of generic preference factors

**Value**

share of option in a branch of the decision tree

**Author(s)**

Johanna Hoppe

---

checkForNAsDups	<i>Check a data.table for NAs and duplicates and throw an error if needed</i>
-----------------	---

---

**Description**

Check a data.table for NAs and duplicates and throw an error if needed

**Usage**

```
checkForNAsDups(dt, varname, codePosition)
```

**Arguments**

dt	data.table to be checked
varname	name of the variable
codePosition	position in the code to find the bug

**Author(s)**

Johanna Hoppe

---

csv2RDS	<i>Creates RDS files for iterative REMIND-EDGE runs from csv input files. Existing files are overwritten silently. Does not return anything.</i>
---------	--

---

**Description**

Creates RDS files for iterative REMIND-EDGE runs from csv input files. Existing files are overwritten silently. Does not return anything.

**Usage**

```
csv2RDS(filename, inputPath, SSPscenario, demScenario, transportPolScenario)
```

**Arguments**

filename	name of the file
inputPath	the path to the folder containing the input (csv-) files
SSPscenario	SSP scenario
demScenario	demand scenario
transportPolScenario	Transport policy scenario

getFilterEntriesUnivocalName

*List associated univocalNames for any entry of the decision tree*

---

**Description**

List associated univocalNames for any entry of the decision tree

**Usage**

```
getFilterEntriesUnivocalName(categories, decisionTree)
```

**Arguments**

categories      vector of categories to filter  
decisionTree    decision tree that contains the univocalNames associated to the category

**Value**

list of categories and their associated univocalNames e.g. trn\_pass as list entry containing a vector c("Compact Car", "HSR", ..)

**Author(s)**

Johanna Hoppe

---

iterativeEdgeTransport

*EDGE-Transport iterative*

---

**Description**

Run in the REMIND output folder in between iterations

**Usage**

```
iterativeEdgeTransport()
```

**Author(s)**

Johanna Hoppe

---

 toolApplyICEbanOnPreferences

*Apply ICE ban on vehicle types that feature preference factors*


---

**Description**

Apply ICE ban on vehicle types that feature preference factors

**Usage**

```
toolApplyICEbanOnPreferences(preferenceTab, helpers)
```

**Arguments**

preferenceTab	data.table including preferences for all levels of the decision tree
helpers	list of helpers

**Value**

Preferences in accordance to the ICE ban policy

**Author(s)**

Johanna Hoppe

---

 toolApplyMixedTimeRes *toolApplyMixedTimeRes*


---

**Description**

Applies two different temporal resolutions on a data.table object in the edgeTransport data structure and do a linear approximation for the highRes data that is not available

**Usage**

```
toolApplyMixedTimeRes(data, helpers, idcols = NULL)
```

**Arguments**

data	data.table containing data in in the edgeTransport data structure (at least featuring univocalName, period, value)
helpers	list containing several helpers used throughout the model. It includes dtTimeRes, a data.table containing the temporal resolution for different univocalNames
idcols	optional supply of idcols for using approx_dt

**Value**

data.table

**Author(s)**

Johanna Hoppe

---

toolApplyScenPrefTrends

*Apply scenario specific adjustments to the preference trends*

---

**Description**

Apply scenario specific adjustments to the preference trends

**Usage**

```
toolApplyScenPrefTrends(
  baselinePrefTrends,
  scenParPrefTrends,
  GDPpcMER,
  policyStartYear,
  GDPcutoff,
  helpers,
  isICEban
)
```

**Arguments**

baselinePrefTrends	Baseline preference trends
scenParPrefTrends	Scenario parameters to be applied on the preference trends
GDPpcMER	Per capita GDP based on market exchange rate
policyStartYear	Year from which the scenario parameters are applied on the baseline preference trends
GDPcutoff	Threshold used to categorize countries into different mitigation groups based on their GDP
helpers	List containing several helpers used throughout the model
isICEban	Switch to turn on ICE phase out policies

**Value**

Scenario specific preference trends



**Author(s)**

Johanna Hoppe

---

toolApplyScenSpecEnInt

*Apply demand scenario specific adjustments to the energy intensity*

---

**Description**

Apply demand scenario specific adjustments to the energy intensity

**Usage**

toolApplyScenSpecEnInt(enInt, scenParEnergyIntensity, policyStartYear, helpers)

**Arguments**

enInt                    Energy intensity input data supplied by mrtransport  
scenParEnergyIntensity                    Transport policy scenario specific energy intensity improvement factors  
policyStartYear                    Year from which scenario specific transport policies are applied  
helpers                    List with helpers

**Value**

data.table with scenario specific energy intensity input data

**Author(s)**

Johanna Hoppe

---

toolApplyScenSpecLoadFactor

*Apply demand scenario specific adjustments to the load Factor*

---

**Description**

Apply demand scenario specific adjustments to the load Factor

**Usage**

```
toolApplyScenSpecLoadFactor(  
  loadFactor,  
  scenParLoadFactor,  
  policyStartYear,  
  helpers  
)
```

**Arguments**

loadFactor	load factor input data supplied by mrtransport
scenParLoadFactor	Scenario specific parameters to be applied don the baseline load factor
policyStartYear	Year when scenario differentiation sets in
helpers	List with helpers

**Value**

Scenario specific load factor

**Author(s)**

Johanna Hoppe

---

toolCalculateAnnuity *Calculate annuity for different vehicle types*

---

**Description**

Calculate annuity for different vehicle types

**Usage**

```
toolCalculateAnnuity(annuityCalc, helpers)
```

**Arguments**

annuityCalc	input data for interest rate and service Life from edgeTransport
helpers	list with helpers

**Author(s)**

Johanna Hoppe

---

`toolCalculateFleetComposition`*Calculate composition of the fleet*

---

**Description**

This function calculates the fleet composition based on the energy service demand, the composition of new sales each year and the service life of vehicles. With the help of the annual mileage, the absolute numbers of vehicles is calculated. If the remaining stock is sufficient to meet the energy service demand, 10

**Usage**

```
toolCalculateFleetComposition(  
    ESdemandFVsalesLevel,  
    vehDepreciationFactors,  
    vehSalesAndModeShares,  
    annualMileage,  
    loadFactor,  
    helpers  
)
```

**Arguments**

ESdemandFVsalesLevel	Energy service demand on fuel vehicle level for new sales
vehDepreciationFactors	Factors for the depreciation of vehicles in each year of the maximum service Life
vehSalesAndModeShares	Vehicle sales and mode shares for the decision tree
annualMileage	Annual kilometers driven by a vehicle
loadFactor	Persons or tons loaded on each vehicle
helpers	List of helpers

**Value**

list of fleet composition data

**Author(s)**

Johanna Hoppe

---

toolCalculateFS3share *toolCalculateFS3share*

---

### Description

Calculates fuel subsector L3 shares

### Usage

```
toolCalculateFS3share(
  endoCostData,
  timesteps,
  timeValue,
  preferences,
  lambdas,
  helpers
)
```

### Arguments

endoCostData	data.table containing all cost components on technology level
timesteps	years for which to calculate FS3 shares
timeValue	data.table containing mode specific time value costs based on speed and gdp
preferences	data.table containing preference trends
lambdas	data.table containing exponents for discrete choice calculation
helpers	list containing helpers like mappings, decisionTree etc.

### Value

data.table containing all cost components on technology level and their respective FS3 shares

### Author(s)

Johanna Hoppe

---

toolCalculateInitialIncoCost

*Apply regional differences for inconvenience cost start values based on ICE cost differences*

---

### Description

Apply regional differences for inconvenience cost start values based on ICE cost differences

**Usage**

```
toolCalculateInitialIncoCost(  
  combinedCost,  
  incoCostStartVal,  
  annuity,  
  loadFactor,  
  annualMileage,  
  helpers  
)
```

**Arguments**

combinedCost	total cost of ownership
incoCostStartVal	start values for inconvenience costs
annuity	calculated annuity for different vehicle types
loadFactor	load factor data
annualMileage	annual mileage data
helpers	list with helpers

**Value**

data.table including initial inconvenience costs from 1990-2020 for LDV 4W US\$2005/(plt)km

**Author(s)**

Johanna Hoppe

---

```
toolCalculateVehicleDepreciationFactors  
Calculate vehicle depreciation factors for fleet tracking
```

---

**Description**

Calculate vehicle depreciation factors for fleet tracking

**Usage**

```
toolCalculateVehicleDepreciationFactors(annuityCalc, helpers)
```

**Arguments**

annuityCalc	parameters for annualization
helpers	list with helpers

**Value**

data.table including vehicle depreciation factors over service life#'

**Author(s)**

Johanna Hoppe

---

toolCalibrateHistPrefs

*Calibrate the logit share weights to historical data.*

---

**Description**

Calibrate the logit share weights to historical data.

**Usage**

```
toolCalibrateHistPrefs(  
  combinedCosts,  
  histESdemand,  
  timeValueCost,  
  lambdas,  
  helpers  
)
```

**Arguments**

combinedCosts	Annualized total cost of ownership
histESdemand	Historical energy service demand data
timeValueCost	Time value cost for passenger transport modes
lambdas	Exponents for discrete choice function
helpers	list with helpers

**Value**

data.table with calibrated historical preferences

---

```
toolCheckAllLevelsComplete
    toolCheckAllLevelsComplete
```

---

**Description**

Checks whether data is complete for all levels of decision tree

**Usage**

```
toolCheckAllLevelsComplete(data, decisionTree, name)
```

**Arguments**

data	data.table containing data in all levels format that should be checked
decisionTree	data.table containing full edgeTransport decision Tree
name	name of variable to be checked

**Value**

data.table

**Author(s)**

Johanna Hoppe

---

```
toolCombineCAPEXandOPEX
    Function that converts CAPEX and OPEX into US$2005/(plt)km and
    provides them combined in a structured format
```

---

**Description**

Function that converts CAPEX and OPEX into US\$2005/(plt)km and provides them combined in a structured format

**Usage**

```
toolCombineCAPEXandOPEX(
  CAPEXtrackedFleet,
  nonFuelOPEXtrackedFleet,
  CAPEXother,
  nonFuelOPEXother,
  fuelCosts,
  subsidies,
```

```

    energyIntensity,
    loadFactor,
    annualMileage,
    annuity,
    helpers
)

```

### Arguments

CAPEXtrackedFleet	CAPEX data for vehicle types that feature fleet tracking: Cars, trucks, busses
nonFuelOPEXtrackedFleet	non-fuel OPEX data for vehicle types that feature fleet tracking: Cars, trucks, busses
CAPEXother	CAPEX data for other vehicle types
nonFuelOPEXother	non-fuel OPEX data for other vehicle types
fuelCosts	fuel cost data
subsidies	purchase price subsidy data
energyIntensity	energy intensity data
loadFactor	load factor data
annualMileage	annual mileage data
annuity	calculated annuity for different vehicle types
helpers	list with helpers

### Value

data.table including total costs of ownership in US\$2005/(plt)km

---

toolDemandRegression *Energy service demand projection*

---

### Description

Energy service demand projection

### Usage

```

toolDemandRegression(
  historicalESdemand,
  GDPperCapitaPPP,
  POP,
  genParDemRegression,
  scenParDemRegression,
)

```



```

    scenParRegionalDemRegression,
    scenParDemandFactors,
    baseYear,
    policyStartYear,
    helpers
)

```

### Arguments

historicalESdemand	Historical energy service demand
GDPperCapitaPPP	GDP per capita based on purchase power parity
POP	Population data
genParDemRegression	General regression factors
scenParDemRegression	Scenario specific general regression factors
scenParRegionalDemRegression	Scenario specific regionally differentiated regression factors
scenParDemandFactors	Demand scenario factors
baseYear	End year of historical energy service demand data
policyStartYear	Start year of scenario differentiation
helpers	list with helpers

### Value

Scenario specific energy service demand for all model years on CES level

### Author(s)

Johanna Hoppe

---

toolDiscreteChoice	<i>Calculate vehicle sales shares and mode shares for all levels of the decisionTree.</i>
--------------------	---

---

### Description

Function that traverses each level of the decision tree and calculates the shares according to the discrete choice approach

### Usage

```
toolDiscreteChoice(input, generalModelPar, updatedEndoCosts, helpers)
```

**Arguments**

input	dataset for discrete choice module
generalModelPar	general model parameter
updatedEndoCosts	updated endogenous costs
helpers	list of helpers

**Value**

calculated shares

**Author(s)**

Johanna Hoppe

---

toolEdgeTransportSA    *Energy Demand Generator (EDGE)- Transport Model*

---

**Description**

The Edge Transport Model includes the transport specific input data preparation, a choice model to determine transport mode and technology shares, a demand regression and a fleet tracking for cars, busses and trucks

**Usage**

```
toolEdgeTransportSA(  
  SSPscen,  
  transportPolScen,  
  isICEban = FALSE,  
  demScen = "default",  
 .gdxPath = NULL,  
  outputFolder = NULL,  
  isStored = TRUE,  
  isTransportReported = TRUE,  
  isTransportExtendedReported = FALSE,  
  isREMINDinputReported = FALSE,  
  isAnalyticsReported = FALSE  
)
```

**Arguments**

SSPscen	SSP or SDP scenario
transportPolScen	EDGE-T transport policy scenario
isICEban	optional enabling of ICE ban
demScen	Demand scenario, used to apply reduction factors on total demands from the regression
gdxPath	Path to a GDX file to load price signals from a REMIND run
outputFolder	Path to folder for storing output data
isStored	Optional saving of intermediate RDS files
isTransportReported	Optional transport reporting in MIF format
isTransportExtendedReported	Optional extension of transport reporting providing more detailed variables
isREMINDinputReported	Optional reporting of REMIND input data
isAnalyticsReported	Optional reporting of analytics data (e.g. variables over iterations)

**Value**

Transport input data for REMIND

**Author(s)**

Johanna Hoppe, Jarusch Müßel, Alois Dirnaichner, Marianna Rottoli

---

toolLoadDecisionTree *Read and build the complete structure of the edgeTransport decision tree*

---

**Description**

Read and build the complete structure of the edgeTransport decision tree

**Usage**

```
toolLoadDecisionTree(regionAggregation = "iso")
```

**Arguments**

regionAggregation	choose one of the different options for regional aggregation (isolregionCode21regionCode12)
-------------------	---

**Value**

data.table of full spatially extended edgeTransport decision tree

**Author(s)**

Johanna Hoppe

---

toolLoadInputs	<i>Load all inputs that are required to run the model</i>
----------------	---

---

**Description**

Load all inputs that are required to run the model

**Usage**

```
toolLoadInputs(SSPscen, transportPolScen, demScen,.gdxPath, hybridElecShare)
```

**Arguments**

SSPscen	SSP or SDP scenario
transportPolScen	EDGE-T transport policy scenario
demScen	Demand scenario, used to apply reduction factors on total demands from the regression
.gdxPath	Path to a GDX file to load price signals from a REMIND run
hybridElecShare	Share of electricity in Hybrid electric vehicles

**Value**

list with different input data sets

**Author(s)**

Johanna Hoppe

---

toolLoadIterativeInputs  
*Load iterative inputs*

---

**Description**

Load iterative inputs

**Usage**

```
toolLoadIterativeInputs(
    edgeTransportFolder,
    inputFolder,
    inputFiles,
    numberOfRegions,
    SSPscenario,
    transportPolScenario,
    demScenario
)
```

**Arguments**

edgeTransportFolder	transport folder
inputFolder	the path to the folder containing the input (csv-) files
inputFiles	names of the input files
numberOfRegions	regional resolution
SSPscenario	SSP scenario
transportPolScenario	Transport policy scenario
demScenario	demand scenario

---

toolLoadmrdriersData *Load GDP and Population data from mrdriers*

---

**Description**

Load GDP and Population data from mrdriers

**Usage**

```
toolLoadmrdriersData(SSPscen, helpers)
```

**Arguments**

SSPscen            SSP scenario for which the mrdriers input data shall be loaded  
 helpers            list containg several helpers used throughout the model. It includes dtTimeRes,  
                       a data.table containing the temporal resolution for different univocalNames

**Value**

list of data.tables containing mrdriers input data

---

toolLoadmrremindData    *Load data from mrremind*

---

**Description**

Load data from mrremind

**Usage**

toolLoadmrremindData(helpers)

**Arguments**

helpers            list containg several helpers used throughout the model. It includes dtTimeRes,  
                       a data.table containing the temporal resolution for different univocalNames

**Value**

list of data.tables containing mrremind input data

---

toolLoadmrtransportData  
                               *Load input data from the mrtransport package*

---

**Description**

Load input data from the mrtransport package

**Usage**

toolLoadmrtransportData(SSPscen)

**Arguments**

SSPscen            SSP scenario for which the mrtransport input data should be loaded

**Value**

list of data.tables with the mrtransport input data

---

toolLoadPackageData     *Load input data from the edgeTransport package and choose data according to SSP and transport policy scenario*

---

**Description**

Load input data from the edgeTransport package and choose data according to SSP and transport policy scenario

**Usage**

```
toolLoadPackageData(SSPscenario, transportPolScenario, demScenario = NULL)
```

**Arguments**

SSPscenario     SSP scenario for which the package data should be loaded  
transportPolScenario     transport policy scenario for which the package data should be loaded  
demScenario     demand scenario for which the package input data should be loaded

**Value**

list of data.tables with the package input data

---

toolLoadREMINDesDemand  
                                  *Load REMIND energy service demand*

---

**Description**

Load the energy service demand from a REMIND fulldata.gdx on sector level (CES level) in [bn (plt)km/yr] and the requested temporal resolution

**Usage**

```
toolLoadREMINDesDemand(gdxPath, helpers)
```

**Arguments**

gdxPath             path to REMIND fulldata.gdx  
helpers             list of helpers

---

toolLoadREMINDfuelCosts

*Load fuel prices from a REMIND fulldata.gdx in [US\$2005/MJ] and map them on to the edgeTransport decision tree. The output is provided in the same spatial resolution as the transferred.gdx file and the temporal resolution is set according to the param yrs.*

---

### Description

Load fuel prices from a REMIND fulldata.gdx in [US\$2005/MJ] and map them on to the edgeTransport decision tree. The output is provided in the same spatial resolution as the transferred.gdx file and the temporal resolution is set according to the param yrs.

### Usage

```
toolLoadREMINDfuelCosts(gdxPath, hybridElecShare, helpers)
```

### Arguments

gdxPath	path to REMIND fulldata.gdx
hybridElecShare	Share of electricity in Hybrid electric vehicles
helpers	list with helpers

### Value

fuel costs on technology level

---

toolNormalizePreferences

*Normalize preferences so that the maximum in each branch of the decision tree equals 1*

---

### Description

Normalize preferences so that the maximum in each branch of the decision tree equals 1

### Usage

```
toolNormalizePreferences(preferenceTab)
```

### Arguments

preferenceTab	data.table including preferences for all levels of the decision tree
---------------	--



**Value**

Normalized preferences

**Author(s)**

Johanna Hoppe

---

toolOrderandCheck	<i>toolOrderandCheck</i>
-------------------	--------------------------

---

**Description**

sort data.table according to edgeTransport data structure and check for NAs If checkCompleteness is activated it is further checked, if the full data set is provided. In case of fleetVars == TRUE the full data set is reduced to the vehicle types that feature fleet tracking

**Usage**

```
toolOrderandCheck(
  data,
  decisionTree,
  yrs = NULL,
  checkCompleteness = FALSE,
  fleetVars = FALSE
)
```

**Arguments**

data	data.table containing data in all levels format that should be checked
decisionTree	data.table containing full edgeTransport decision Tree
yrs	temporal resolution
checkCompleteness	if activated it is further checked, if the full data set is provided
fleetVars	if activated the full data set is reduced to vehicle types that feature fleet tracking

**Value**

data.table

**Author(s)**

Johanna Hoppe

---

toolPrepareDataEndogenousCosts  
*Format all cost components*

---

**Description**

Format all cost components

**Usage**

```
toolPrepareDataEndogenousCosts(inputData, lambdas, helpers)
```

**Arguments**

inputData	List containing inputData
lambdas	exponents for discrete choice calculation
helpers	List with helpers

**Value**

data.table including all cost components

**Author(s)**

Johanna Hoppe

---

toolPrepareScenInputData  
*Apply transport scenario specific adjustments to input data*

---

**Description**

Apply transport scenario specific adjustments to input data

**Usage**

```
toolPrepareScenInputData(  
  genModelPar,  
  scenModelPar,  
  inputDataRaw,  
  policyStartYear,  
  GDPcutoff,  
  helpers,  
  isICEban  
)
```

**Arguments**

genModelPar	General model parameters
scenModelPar	Transport scenario (SSPscen + demScen + polScen) specific model parameters
inputDataRaw	Raw input data
policyStartYear	Year when scenario differentiation sets in
GDPcutoff	GDP cutoff to differentiate between regions
helpers	List with helpers
isICEban	optional enabling of ICE ban

**Value**

List of data.tables with scenario specific input data

**Author(s)**

Johanna Hoppe

---

toolTraverseDecisionTree

*Calculate data for the next higher level of the decision tree.*

---

**Description**

Function that aggregates the data for the next higher level of the decision tree

**Usage**

```
toolTraverseDecisionTree(data, upperLevel, decisionTree)
```

**Arguments**

data	data.table containing the data of the lower level
upperLevel	name of the upper level in the decision tree
decisionTree	full edgeTransport decision tree

**Value**

data.table

**Author(s)**

Johanna Hoppe

---

```

toolUpdateEndogenousCosts
    toolUpdateEndogenousCosts

```

---

### Description

Provides updates for endogenous cost components e.g. inconvenience costs for cars

### Usage

```

toolUpdateEndogenousCosts(
    dataEndoCosts,
    depreciationFactors,
    scenParIncoCost,
    policyStartYear,
    timeValue,
    preferences,
    lambdas,
    helpers,
    isICEban,
    vehiclesPerTech = NULL
)

```

### Arguments

<code>dataEndoCosts</code>	data.table containing all cost components for cars over the full range of policy years in a yearly resolution. Exogenous CAPEX and OPEX are provided over the full range. Endogenous cost components and FS3 shares are provided until <code>policyStartYear</code> . Rest is filled with NA.
<code>depreciationFactors</code>	data.table containing vehicle depreciation factor for each year of service Life
<code>scenParIncoCost</code>	data.table containing scenario specific parameters for inconvenience costs policy mask
<code>policyStartYear</code>	year from which scenario-specific differentiation begins
<code>timeValue</code>	data.table containing mode specific time value costs based on speed and gdp
<code>preferences</code>	preference factor trends
<code>lambdas</code>	data.table containing exponents for discrete choice calculation
<code>helpers</code>	list containing helpers like mappings, decisionTree etc.
<code>isICEban</code>	optional enabling of ICE ban
<code>vehiclesPerTech</code>	data.table containing total number of vehicles for all years and regions

**Value**

list containing `data.table` with endogenous cost components over the full time span and additional `data.tables` for model behavior analysis

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