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1 Summary
1.1 GHG Emissions



### 1.2 CO2 by sector








1.3 FE by sector




1.4 FE per capita (by sector, time domain, area plot)
default

welfare_mod namechange













- default $\Delta$ welfare_mod_namechangeIndustryBuildingsTransport
1.5 FE per capita (by sector, time domain, line graph)




### 1.6 FE per capita (by sector, GDP)









$$
\begin{array}{lllll}
\text { —otal } & \text { Solids } \\
\text { Liquids }
\end{array} \text { Gases }_{\text {Heat }} \quad \square \text { Hydrogen }
$$

1.9 FE Buildings by carrier






### 1.11 FE CDR by carrier







| Hydrogen | Solar\|CSP | Nuclear | Gas\|w/o CCS | Coal\|w/o CCS |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Wind | Biomass\|w/o CCS | Hydro | Gas\|w/ CCS | Coal\|w/ CCS |  |
| Solar\|PV | Biomass\|w/ CCS |  | Geothermal | Oil |  |


1.13 SE non-electric by carrier
1.14 PE by sector
1.15 PE by carrier





## Model output

$\rightarrow$ REMIND default
$\rightarrow$ REMIND welfare_mod_namechange

## Model output

- REMIND default
$\rightarrow$ REMIND welfare_mod_namechange




## Model output

$\rightarrow$ REMIND default
$\rightarrow$ REMIND welfare_mod_namechange

## Model output

$\rightarrow$ REMIND default

- REMIND welfare_mod_namechange


## 2 Macro

### 2.1 Consumption




## Model output

$\rightarrow$ REMIND default
$\rightarrow$ REMIND welfare_mod_namechange

## Model output

- REMIND default
$\rightarrow$ REMIND welfare mod namechange
2.2 Population


GLO

Year




|  | EUR |
| :---: | :---: |
| $400-$ |  |
| $200-$ |  |
| 0 |  |
| 0 |  |

LAM




Model output
$\rightarrow$ REMIND default
Historical data

+ WDI


## Model output

$\rightarrow$ REMIND default
$\rightarrow$ REMIND welfare_mod_namechange

Historical data

+ WDI



## Model output

$\rightarrow$ REMIND default
$\rightarrow$ REMIND welfare_mod_namechange
2.4 GDP - PPP


## Model output

$\rightarrow$ REMIND default

## Historical data

+ IHME_USD05_PPP_pc


Model output
$\rightarrow$ REMIND default
$\rightarrow$ REMIND welfare_mod_namechange

## Historical data

+ IHME_USD05_PPP_pc
$\because$ REMIND welfare mod namechange
2.5 GDP - PPP per Capita



## Model output

$\rightarrow$ REMIND default
$\rightarrow$ REMIND welfare_mod_namechange

Historical data

+ IHME_USD05_PPP_pc



## Model output

$\rightarrow$ REMIND default

## Historical data

+ IHME_USD05_PPP_pc
2.6 Capital Stock





## Model output

$\rightarrow$ REMIND default
$\rightarrow$ REMIND welfare_mod_namechange




Model output
$\rightarrow$ REMIND default

- REMIND welfare_mod_namechange




## Model output

$\rightarrow$ REMIND default
$\rightarrow$ REMIND welfare mod namechange

## Model output

$\rightarrow$ REMIND default
$\rightarrow$ REMIND welfare mod namechange
2.9 Prices
2.9.1 PE Prices








慦




## Model output

- REMIND default
$\rightarrow$ REMIND welfare mod namechange


## Model output

$\rightarrow$ REMIND defaul
$\rightarrow$ REMIND welfare mod namechange















## Model output

$\rightarrow$ REMIND default
$\rightarrow$ REMIND welfare mod namechange

## Model output

$\rightarrow$ REMIND default
$\rightarrow$ REMIND welfare_mod_namechange



Model output
$\rightarrow$ REMIND default
$\rightarrow$ REMIND welfare_mod_namechange


## Model output

- REMIND default
- REMIND welfare mod namechange







## Model output

$\rightarrow$ REMIND default
$\rightarrow$ REMIND welfare mod namechange









Model output

- REMIND default
$\rightarrow$ REMIND welfare_mod_namechange






Model output
$\Rightarrow$ REMIND default
$\rightarrow$ REMIND welfare_mod_namechange


## Model output

- REMIND default
$\rightarrow$ REMIND welfare_mod_namechange


Model output
$\rightarrow$ REMIND default
$\rightarrow$ REMIND welfare_mod_namechange


## Model output

$\rightarrow$ REMIND default
$\rightarrow$ REMIND welfare mod namechange
2.11 FE intensity of GDP









IndustryBuildings



### 2.12 Kaya-Decomposition




## 3 Emissions

### 3.1 GHGtot



## Historical data

## Model output

$\rightarrow$ REMIND default

+ CEDS
$\rightarrow$ REMIND welfare mod namechange

$3.2 \quad \mathrm{CO} 2$



## Historical data

## Model output

$\rightarrow$ REMIND default

+ CEDS
$\rightarrow$ REMIND welfare_mod_namechange

$\rightarrow$ REMIND default
+ CEDS











## Model output

$\rightarrow$ REMIND default
$\rightarrow$ REMIND welfare_mod_namechange


## Model output

$\rightarrow$ REMIND default
$\rightarrow$ REMIND welfare mod namechange


## Model output

$\rightarrow$ REMIND default
$\rightarrow$ REMIND welfare mod namechange


Model output
$\rightarrow$ REMIND default
$\rightarrow$ REMIND welfare mod namechange





## Model output

$\rightarrow$ REMIND default
$\rightarrow$ REMIND welfare_mod_namechange




|  | LAM |  |
| :--- | :--- | :--- | :--- |
| 0.050 |  |  |
| 0.025 |  |  |
| 0.000 |  |  |
| -0.025 |  |  |
| -0.050 |  |  |



Model output
$\rightarrow$ REMIND default
$\rightarrow$ REMIND welfare mod namechange



Model output
$\rightarrow$ REMIND default
$\rightarrow$ REMIND welfare_mod_namechange


Model output
$\rightarrow$ REMIND default
$\rightarrow$ REMIND welfare_mod_namechange


## Model output

$\rightarrow$ REMIND default
$\rightarrow$ REMIND welfare_mod_namechange


Model output
$\rightarrow$ REMIND default
$\rightarrow$ REMIND welfare mod namechange


## Model output

$\rightarrow$ REMIND default

- REMIND welfare_mod_namechange



3.3 CH4


Historical data

## Model output

$\rightarrow$ REMIND default

+ CEDS
$\rightarrow$ REMIND welfare_mod_namechange




## $3.4 \quad \mathrm{~N} 2 \mathrm{O}$



## Historical data

## Model output

$\rightarrow$ REMIND default

+ CEDS
$\rightarrow$ REMIND welfare mod namechange



- REMIND welfare_mod_namechange




## 4 Energy

4.1 Investments Electricity




| Storage | Geothermal | Solar | Biomass\|w/ CCS | Gas\|w/ CCS |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Grid | Hydro | Nuclear | Oil |  | Coal\|w/o CCS |
|  | Hydrogen | Wind |  | Biomass\|w/o CCS | Gas\|w/o CCS |
|  | Coal\|w/ CCS |  |  |  |  |


4.2 Capacities Electricity














4.3 Primary Energy line plots
4.3.1 PE-Coal


## Model output

$\rightarrow$ REMIND default
Historical data

+ IEA
$\rightarrow$ REMIND welfare mod namechange


Model output
$\rightarrow$ REMIND default

- REMIND welfare_mod_namechange

Historical data

+ IEA










Year

Model output
$\rightarrow$ REMIND default
$\rightarrow$ REMIND welfare mod namechange

Historical data

+ IEA





### 4.3.5 Primary Energy Production-Biomass-Energy Crops




Model output
$\rightarrow$ REMIND default
$\rightarrow$ REMIND welfare mod namechange

## Model output

$\rightarrow$ REMIND default
$\rightarrow$ REMIND welfare_mod_namechange

### 4.4 Secondary Energy Mixes

4.4.1 SE-Liquids







- default $\Delta$ welfare mod namechange





4.5 Secondary Energy line plots
4.5.1 SE—Gases



## Model output

$\rightarrow$ REMIND default
Historical data

+ IEA
$\rightarrow$ REMIND welfare mod namechange
















$\rightarrow$ REMIND default
- REMIND welfare_mod_namechange


4.6 Final Energy line plot
4.6.1 Total



## Model output

$\rightarrow$ REMIND default
Historical data

+ EDGE_SSP1
+ IEA






2

| LAM |
| :---: |
| 1 |

른


Model output
$\rightarrow$ REMIND default
$\rightarrow$ REMIND welfare mod namechange

Historical data

+ EDGE_SSP1
+ IEA



### 4.6.3 <br> FE-Gases





IND




Year






Model output
$\rightarrow$ REMIND default
$\rightarrow$ REMIND welfare_mod_namechange

## Historical data

+ EDGE_SSP1
+ EDGE_SSP2
+ IEA


### 4.6.4 FE-Heat



## Model output

$\rightarrow$ REMIND default
$\rightarrow$ REMIND welfare_mod_namechange


## Model output

$\rightarrow$ REMIND default
$\rightarrow$ REMIND welfare mod namechange




Model output
$\rightarrow$ REMIND default
$\rightarrow$ REMIND welfare mod namechange

## Model output

- REMIND default
$\rightarrow$ REMIND welfare mod namechange
4.7 Buildings



## Model output

$\rightarrow$ REMIND default
Historical data

+ EDGE_SSP1
+ IEA












Model output
$\rightarrow$ REMIND defaul
$\rightarrow$ REMIND welfare_mod_namechange

Historical data

+ EDGE_SSP1
+ IEA











4.9 Transport


Model output
$\rightarrow$ REMIND default
Historical data

+ EDGE_SSP1
+ IEA









Model output
$\rightarrow$ REMIND default
$\rightarrow$ REMIND welfare_mod_namechange

Historical data

+ EDGE_SSP1
+ IEA



$\because$ REMIND default
$\because$ REMIND welfare_mod_namechange


5 Useful Energy and Energy Services
5.1 Transport

### 5.1.1 UE for Transport (per Capita, year)




### 5.1.2 UE for Transport (per Capita, GDP)




### 5.1.3 Energy Services for Passenger Transport (per Capita, year)




### 5.1.4 Energy Services for Transport (per Capita, GDP)



ES|Transport|Pass


ES|Transport|Pass|LDV


ES|Transport|Pass|non-LDV


### 5.1.5 Energy Services for Freight Transport (per Capita, year)




### 5.1.6 Energy Services for Freight Transport (per Capita, GDP)




