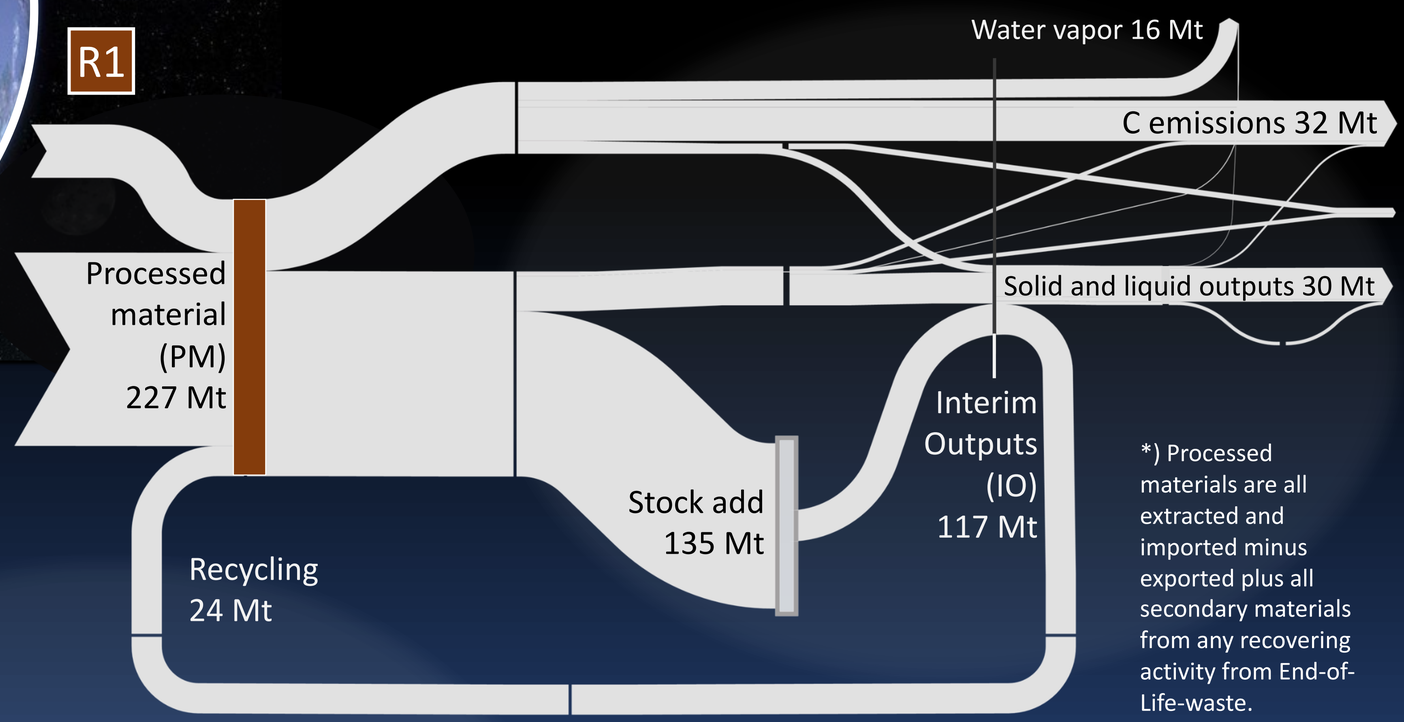
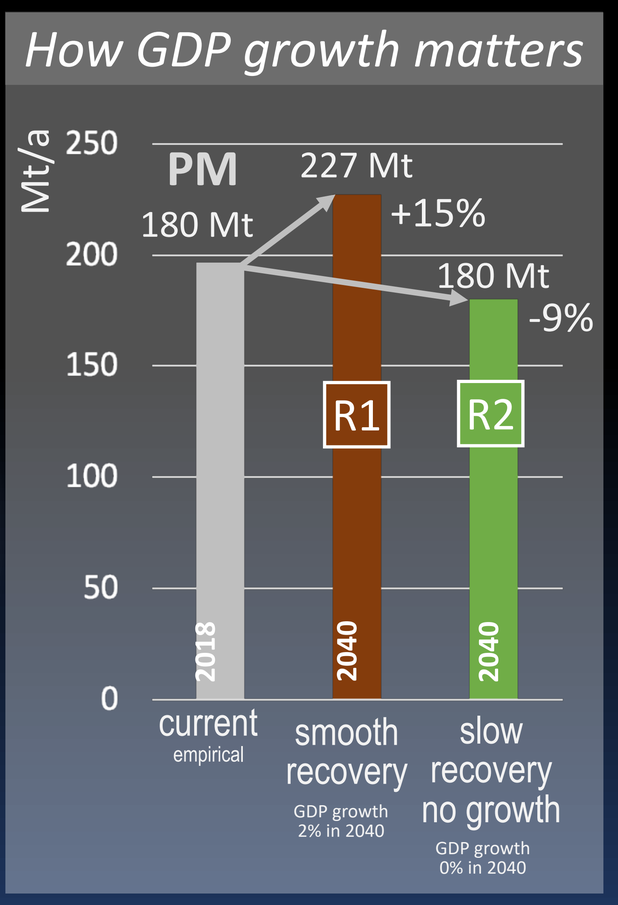
Austrian Circular economy & De-Carbonisation

Austria's biophysical economy in 2040

Reference scenario smooth recovery



*) Processed materials are all extracted and imported minus exported plus all secondary materials from any recovering activity from End-of-Life-waste.



Scenario guide

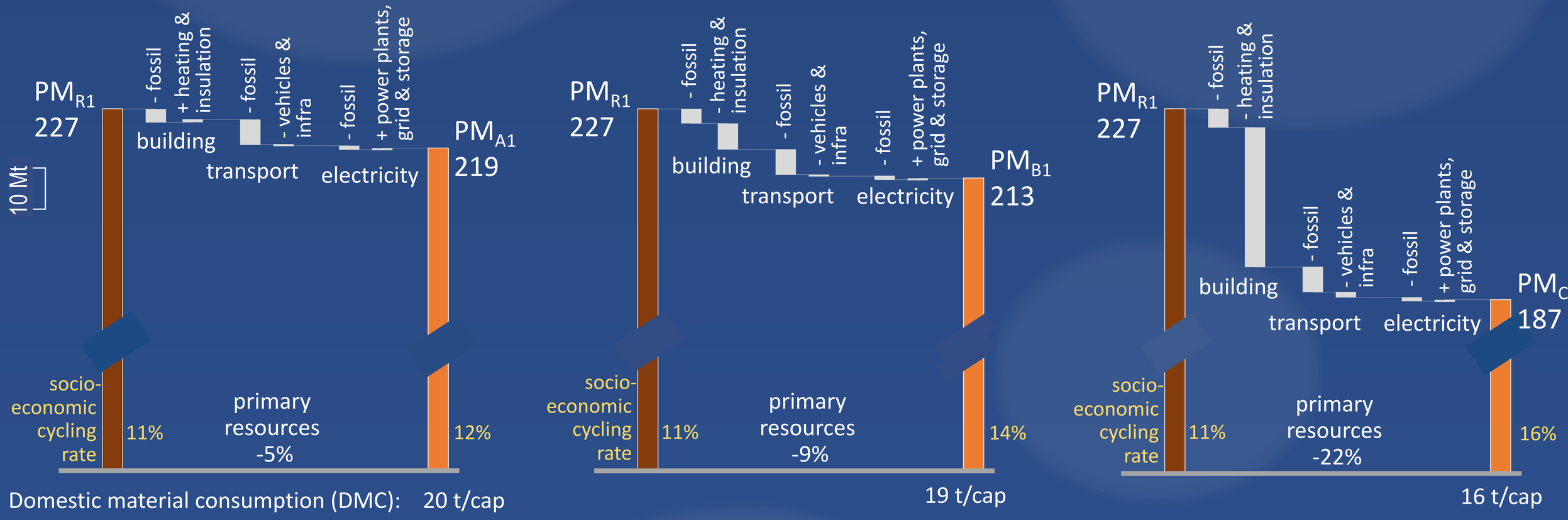
	Reference	Decarbon. & recycle	Decarbon. & reduce	Decarbon. & deep reduce
smooth recovery	R1	A1	B1	C1
slow recovery & no growth	R2	A2	B2	C2

Method:

Mass balanced annual modelling of material and energy flows based on (a) two GDP scenarios: (1) smooth recovery R1 and (2) slow recovery and followed by a no growth development R2 and (b) a continuation of past material intensity trends (t/€)

2040 results: Buildings, transport and electricity sector – Decarbonisation and CE strategies

The graphs show how strategies of each scenario reduce the amount of processed materials of the R1 smooth recovery scenario.



Domestic material consumption (DMC): 20 t/cap

The draft of the climate ministry's circular economy strategy sets 7t/cap DMC as goal (BMK, 2021, p.8)

A1 *Decarbonisation & Recycle*

Material cycles

Recycle, downcycle (backfilling)

building sector decarbonised by 2040
new building standards, insulation, replacement of heating systems (no fossil fuels)

transport sector decarbonised by 2040
moderate modal shift for person and freight transport, vehicle fleet electrification

electricity sector decarbonised by 2030
mainly wind & solar and maintaining level of hydro power

according to available policy documents

B1 *Decarbonisation & Reduce*

Extended lifespan

Eco-design, reuse, repair

building sector decarbonised by 2040
25% reduced living space per cap for new buildings

transport sector decarbonised by 2040
stronger modal shift with PKW person kilometer (PKM) reduced by 15%

electricity sector decarbonised by 2030
as Scenario A1 but with lower electricity demand by building and transport sector

according to far-reaching strategies

C1 *Decarbon. & Deep Reduce*

Smarter product use

Highest material efficiency

increasing transformation depth in direction of arrows

building sector decarbonised by 2040
no new buildings in unbuilt areas, meaning only demolished buildings are replaced

transport sector decarbonised by 2040
strongest shift, PKM reduced by 30%, consequent car sharing, deconstructing roads

electricity sector decarbonised by 2030
as Scenario A1 but with lower electricity demand by building and transport sector

own stronger assumptions

Next steps

- *CE strategies applied to the entire economy*
- *Changes in carbon footprint*
- *Economic feedback loops (soft link)*
- *Employment and value added*

Closely related SDGs

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150 YEARS FEATURING FUTURE 1872 - 2022
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