The challenge of delivering the scale of Transition Infrastructure required, and against the clock…

Sarah Long - AtkinsRéalis

FES 2024 - 2023 Energy Supply & Demand

2023

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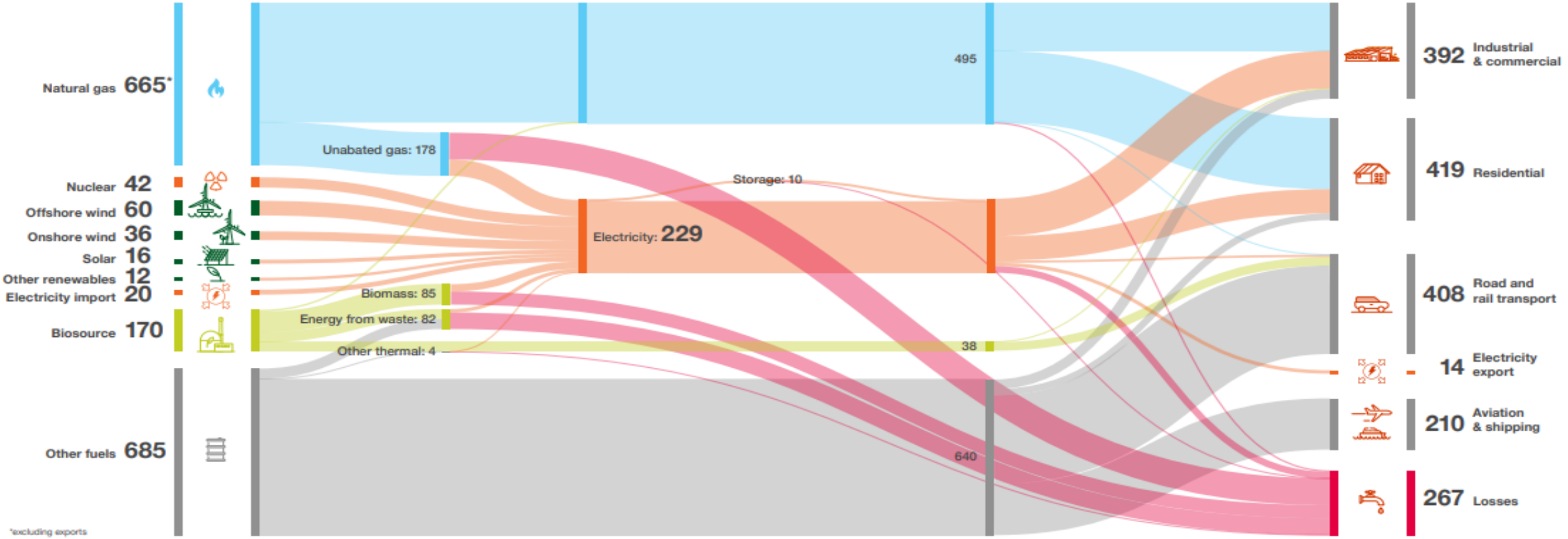
1706 TWh



FES 2024 - Holistic Transition for 2050

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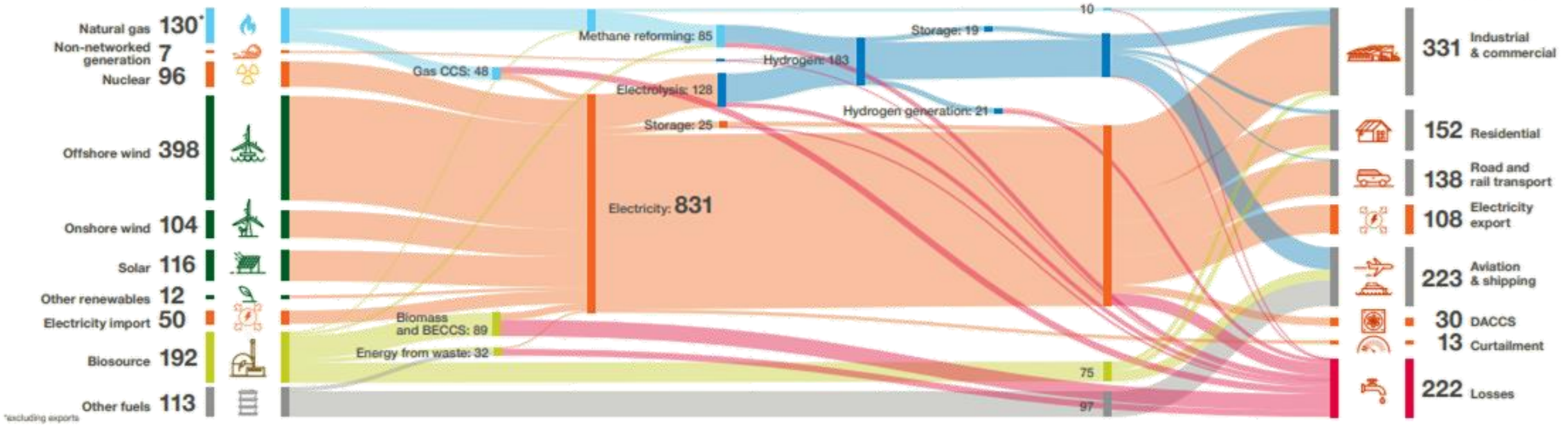


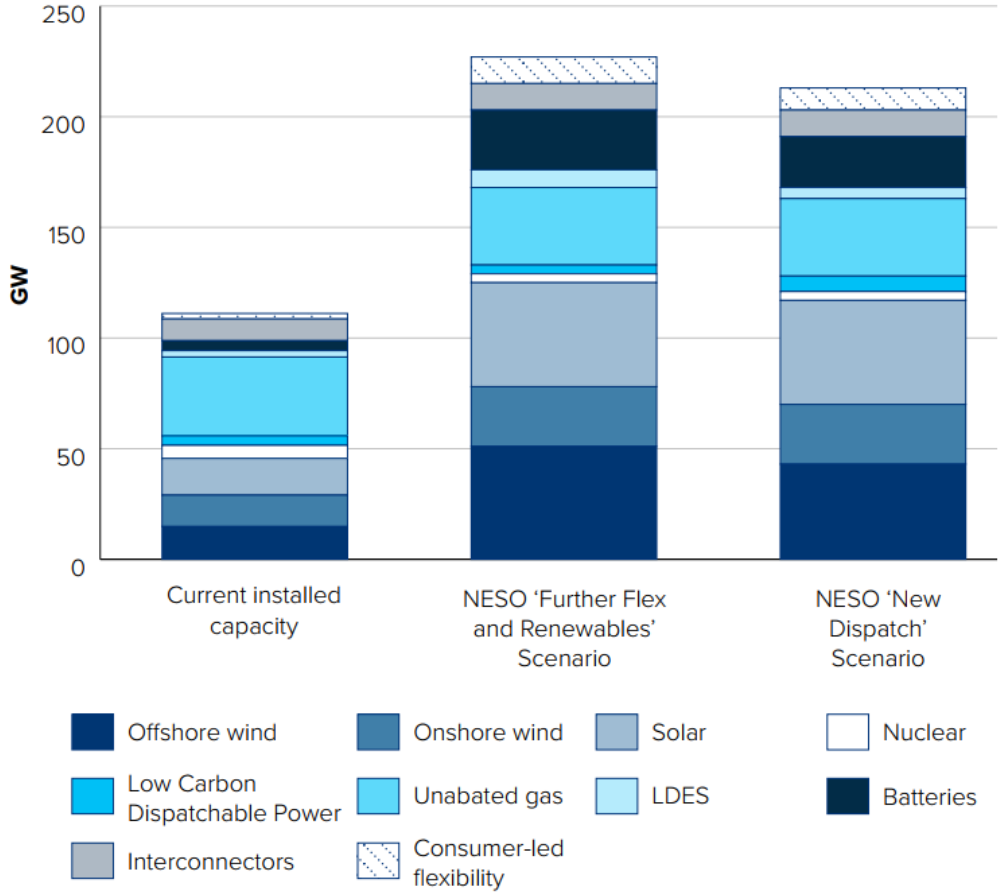
Clean Power 2030

CP2030
FFR

Table 1: Installed capacity in 2030 in the NESO 'Further Flex and Renewables' and 'New Dispatch' scenarios, and the DESNZ 'Clean Power Capacity Range', compared to current installed capacity (GW)

Technology	Current installed capacity[20]		NESO 'Further Flex and Renewables' Scenario	NESO 'New Dispatch' Scenario	DESNZ 'Clean Power Capacity Range'[21]
Variable					
Offshore wind	14.8	+36	51	43	43 – 50
Onshore wind	14.2	+13	27	27	27 – 29
Solar	16.6	+30	47	47	45 – 47
Firm					
Nuclear	5.9	↓	4	4	3 – 4
Dispatchable					
Low Carbon Dispatchable Power[22]	4.3	–	4	7	2[23] – 7
Unabated gas	35.6	–	35	35	35[24]
Flexible					
LDES	2.9	+5	8	5	4 – 6
Batteries	4.5	+22	27	23	23 – 27
Interconnectors	9.8	+2	12	12	12 – 14
Consumer-led flexibility[25]	2.5	+10	12	10	10 – 12

Figure 6: Installed capacity in 2030 in the NESO 'Further Flex and Renewables' and 'New Dispatch' scenarios, compared to current installed capacity (GW)



Note: Numbers for this visual can be found in Table 1

Source: Table 1 and NESO (2024), 'Clean Power 2030'

Build Rate

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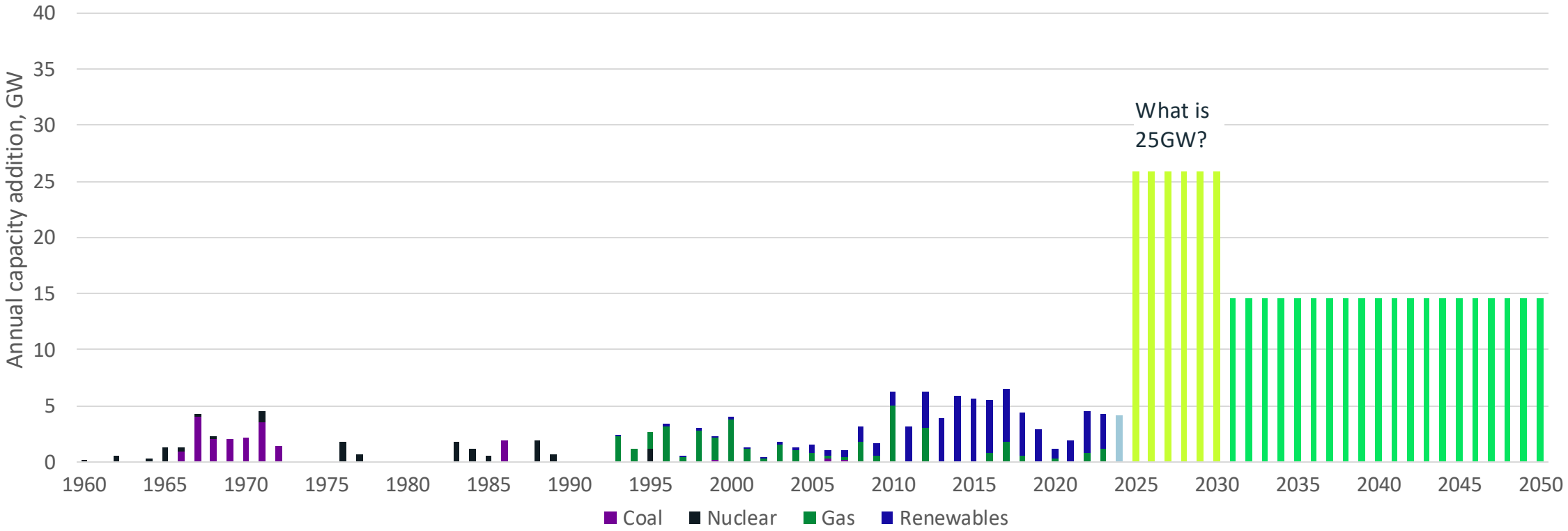
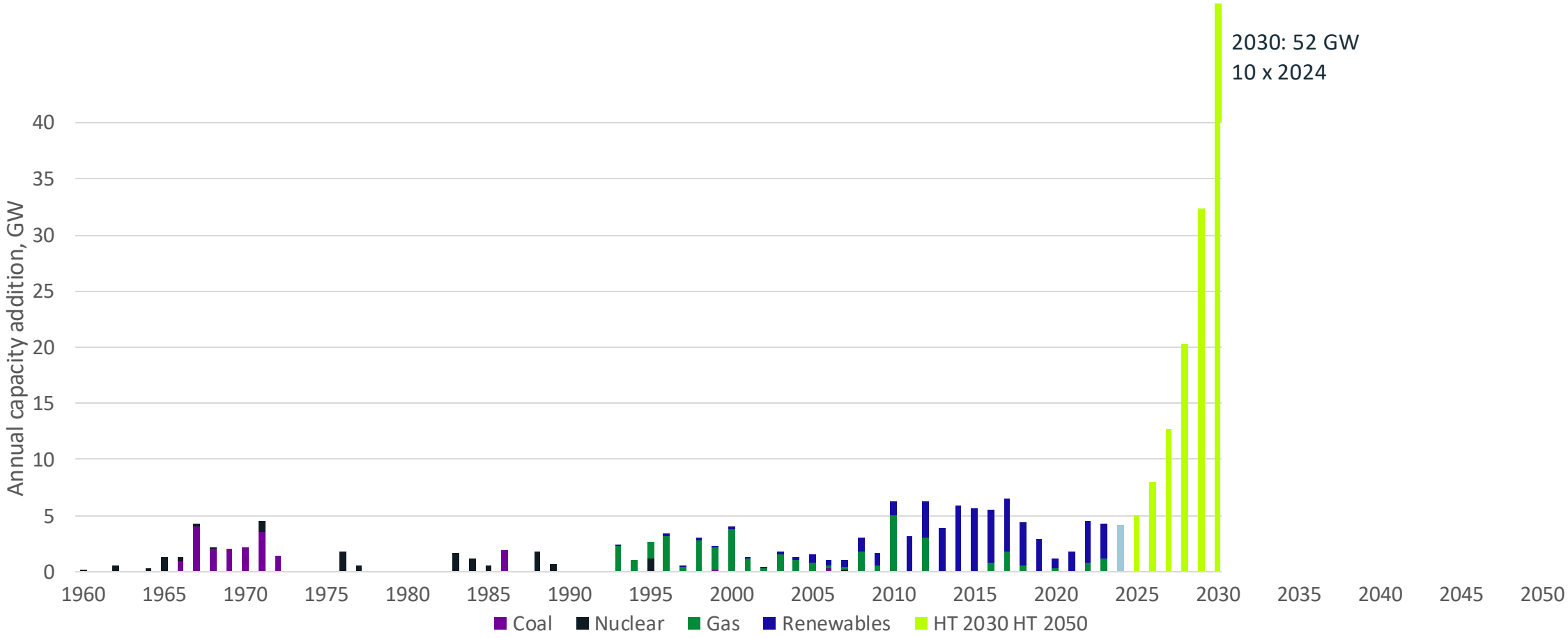
Build rate required for CP 2030 and FES HT 2050

scenarios for low, high and average requirements



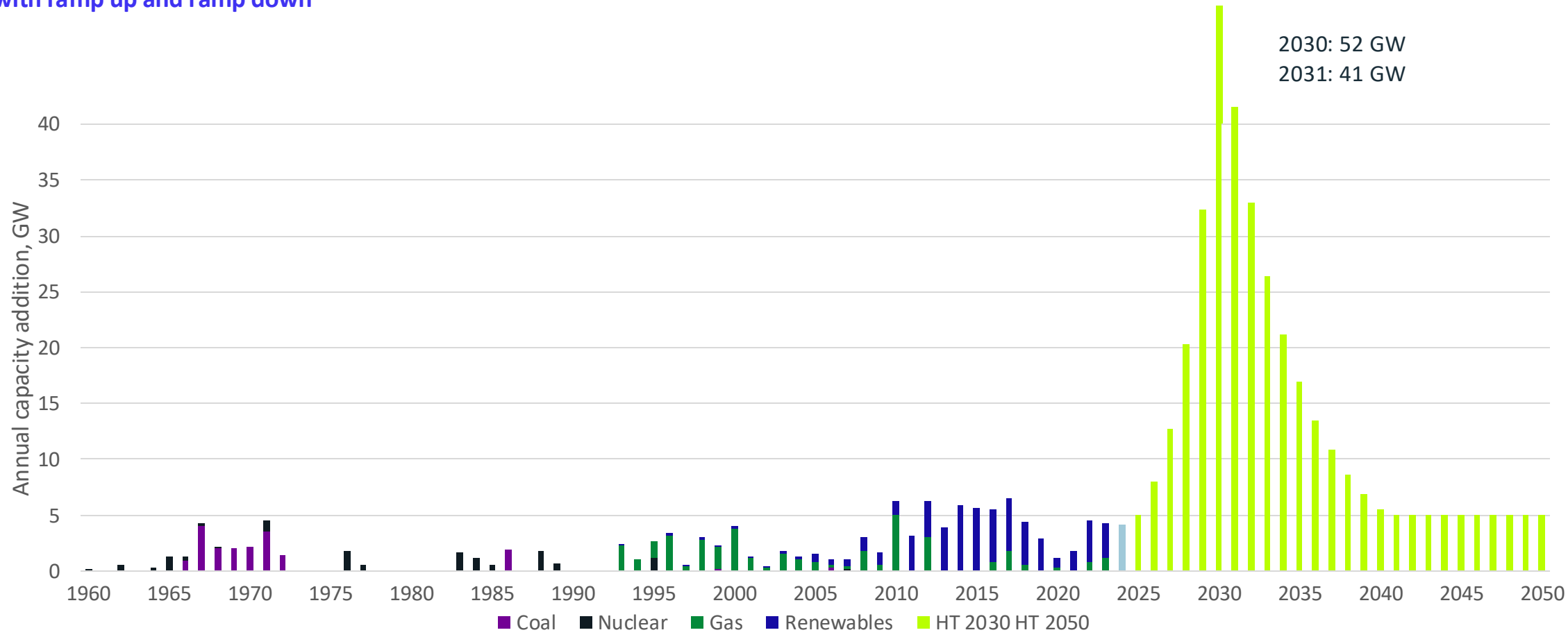
Build rate required for CP2030 FFR

with ramp up

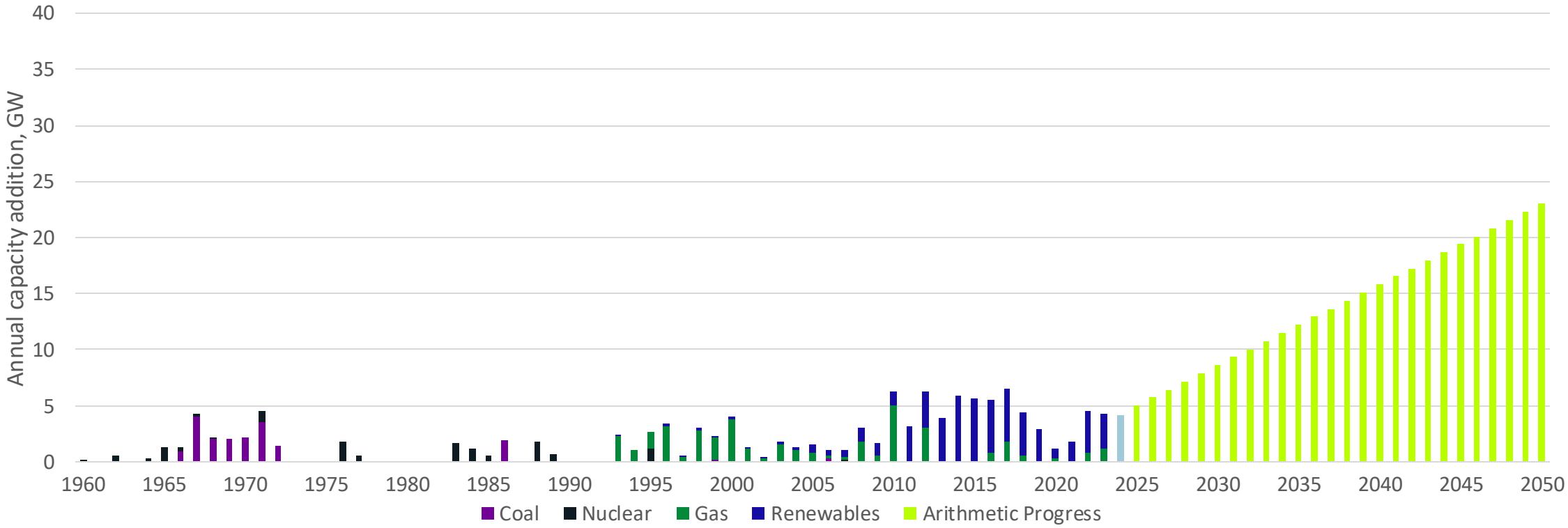


Build rate required for CP2030 FFR and FES HT 2050

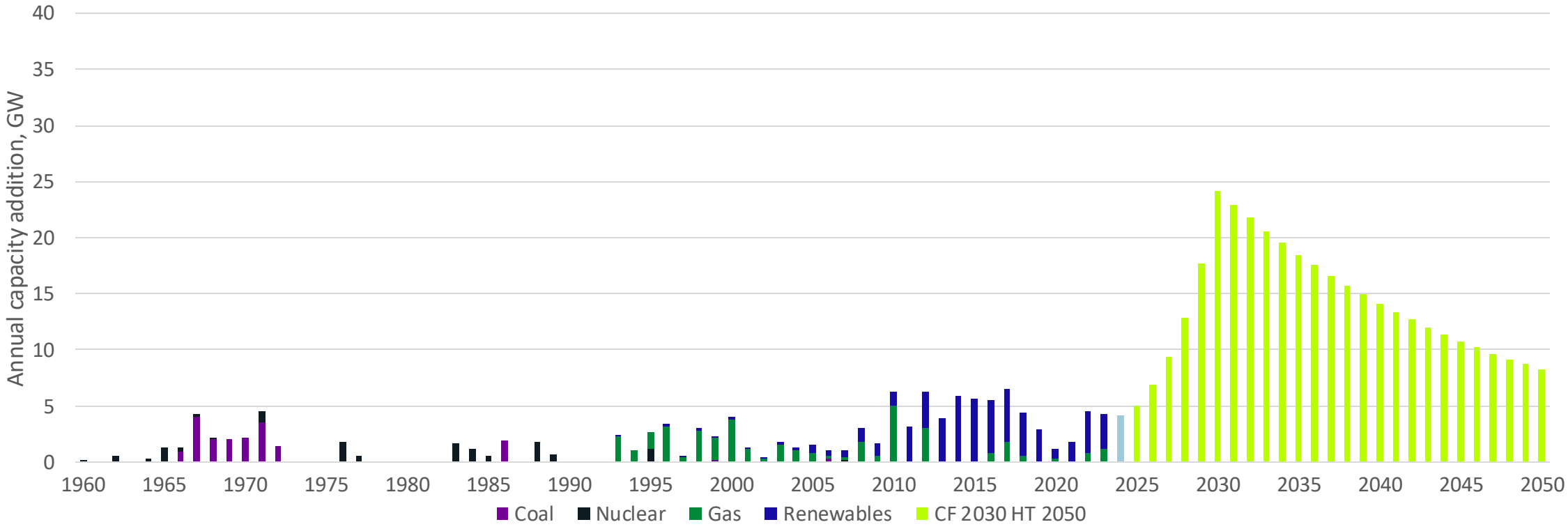
with ramp up and ramp down



Hitting FES HT 2050 target but not CP 2030



Trying to hit CP2030, but missing and hitting FES HT 2050



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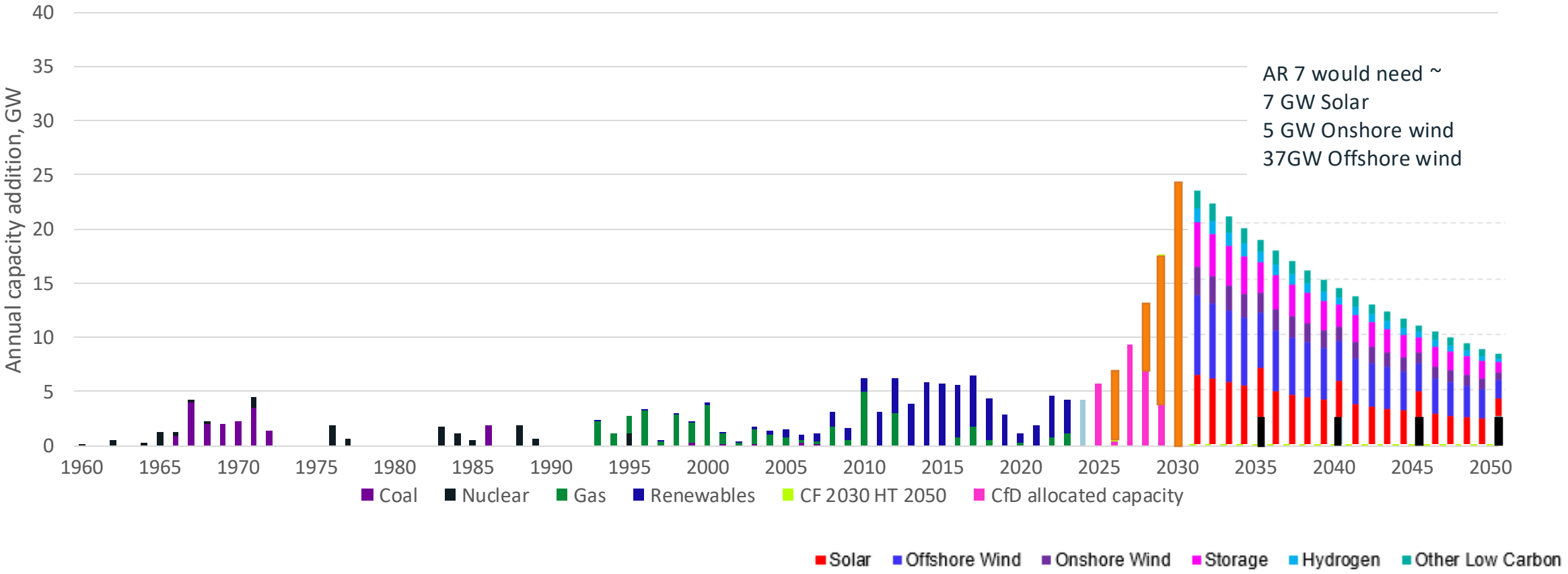
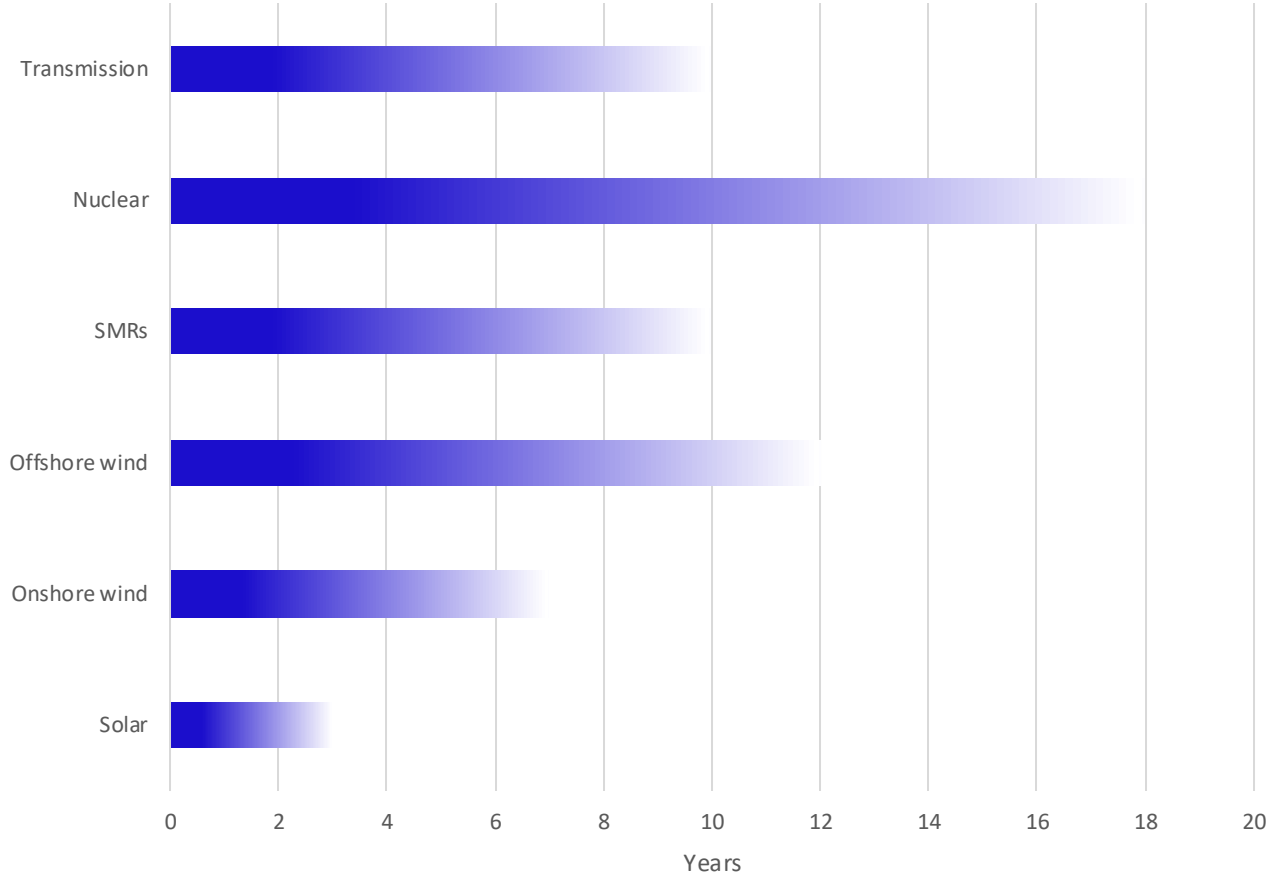


Project Delivery Duration from Submission to Commissioning



Feasibility → Planning & Permitting → Pre-construction → Construction → Commissioning

Synchronicity

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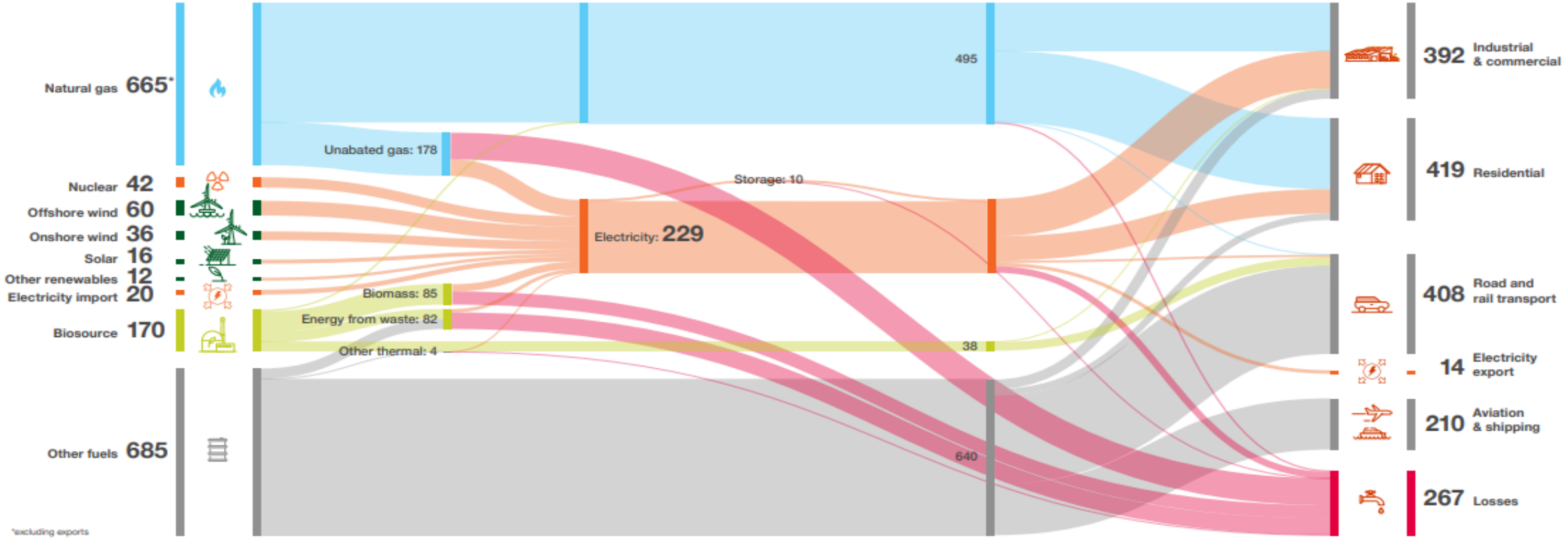

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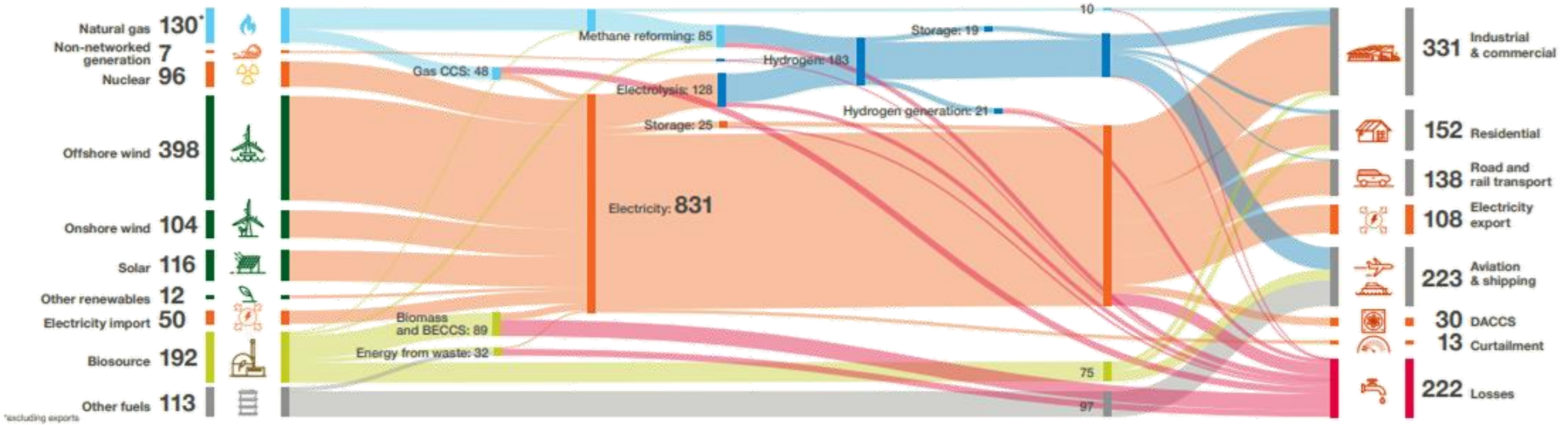
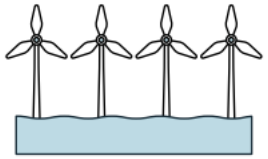
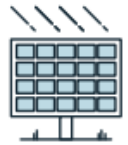
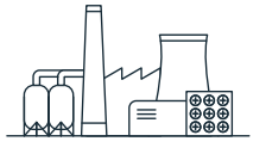


Keeping everything in sync

Generation

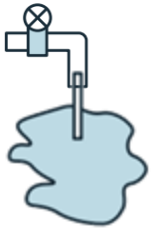




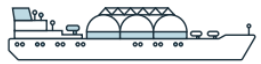


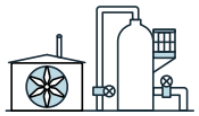
Transmission

Storage



Users





Positive progress

- Planning & Infrastructure Bill – aiming to reduce delivery timeline
- NESO and CP2030 providing strategic direction
- Procurement Act 2023 – now live – simplifying public sector procurement
- Ofgem queue reform – connecting the right things
  Advanced Procurement Mechanism – allowing major components to be purchased
- Capability development to match project pipeline remains challenge