

Circular Economy for the Energy Transition: A Global Perspective

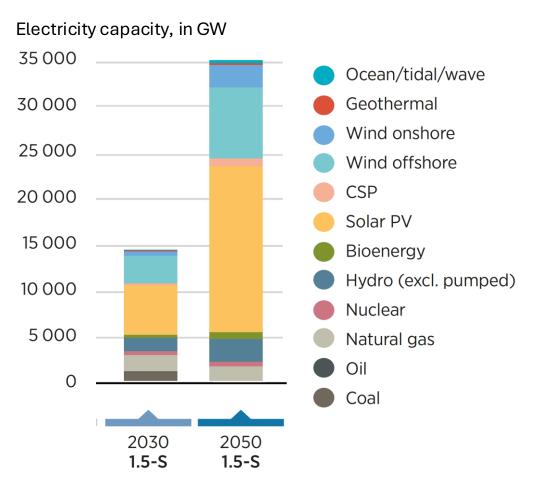
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Webinar: Wired for Circularity – Securing the Power Grids of the Future, 24 October 2024



Global energy transition requires an accelerated deployment of renewables

Global installed power capacity by energy source, 1.5°C scenario, 2030 and 2050



Selected energy transition indicators in the 1.5°C scenario, 2020, 2030 and 2050

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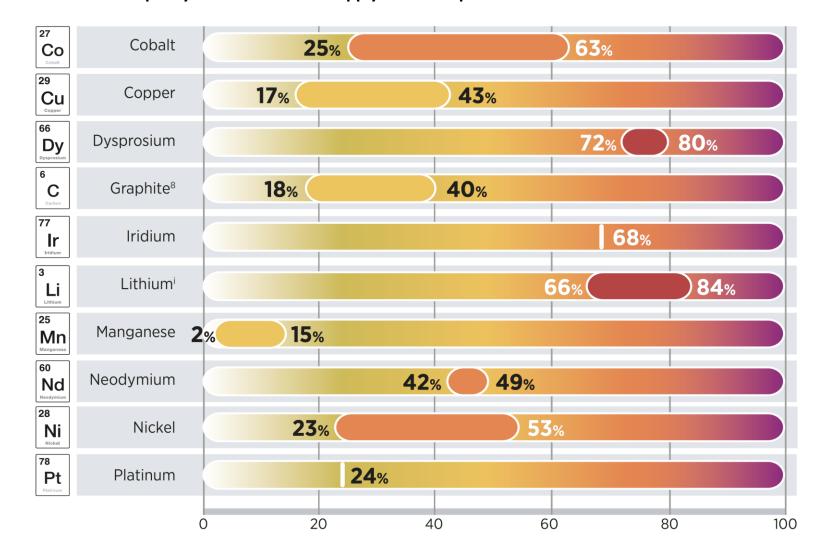
			2030	2050
		2020	1.5°C Scenario	1.5°C Scenario
Heat pump installations (million units)	Global	58	447	793
	G20	58	447	793
Electric and plug-in hydrid light passenger vehicles stock (million units)	Global	10	359	2182
	G20	10	328	1811
EV chargers (million units)	Global	1	372	2300
	G20	1	339	1905
RE total installed capacity (GW)	Global	2813	11 174	33 216
	G20	2 435	9 3 5 9	24 868
Battery storage (GW)	Global	17	359	4098
	G20	16	278	2925

Source: IRENA, 2023



Material demand for energy transition technologies will also increase

IRENA estimation on disparity between current supply and anticipated demand in 2030 for selected materials

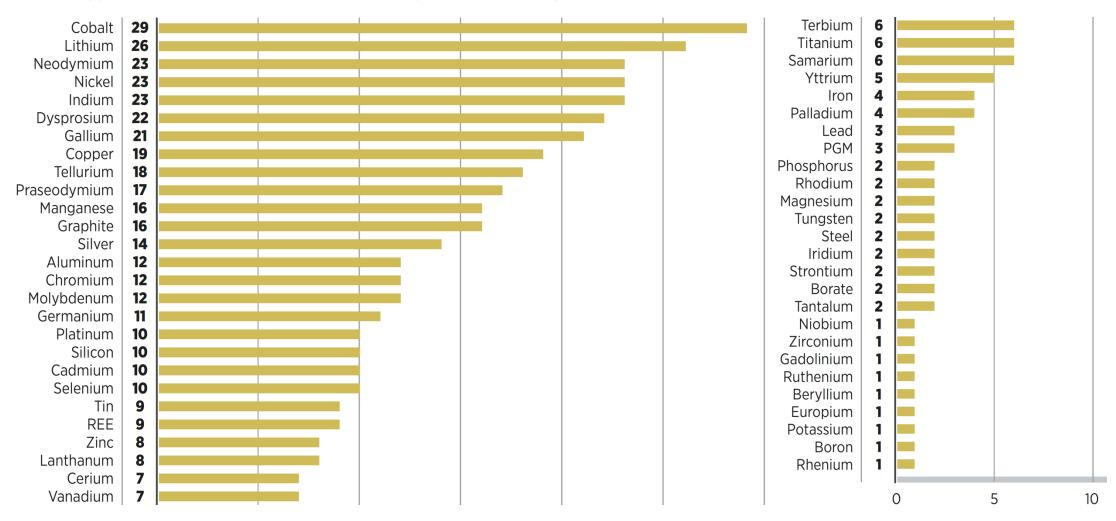






Some materials are defined as critical by countries and regions

Energy transition materials defined as critical by countries and regions, 2023

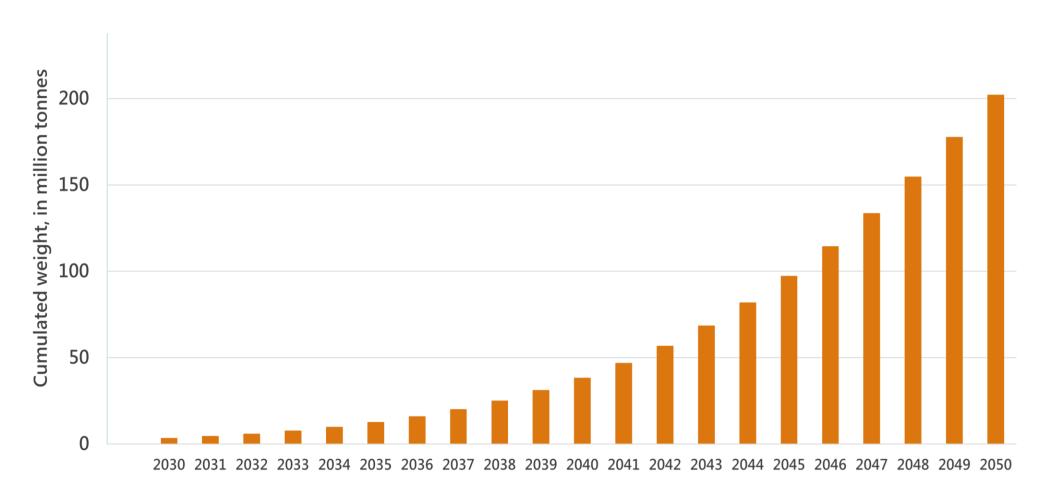


Source: IRENA, 2023



End-of-life management of renewables can be another challenge

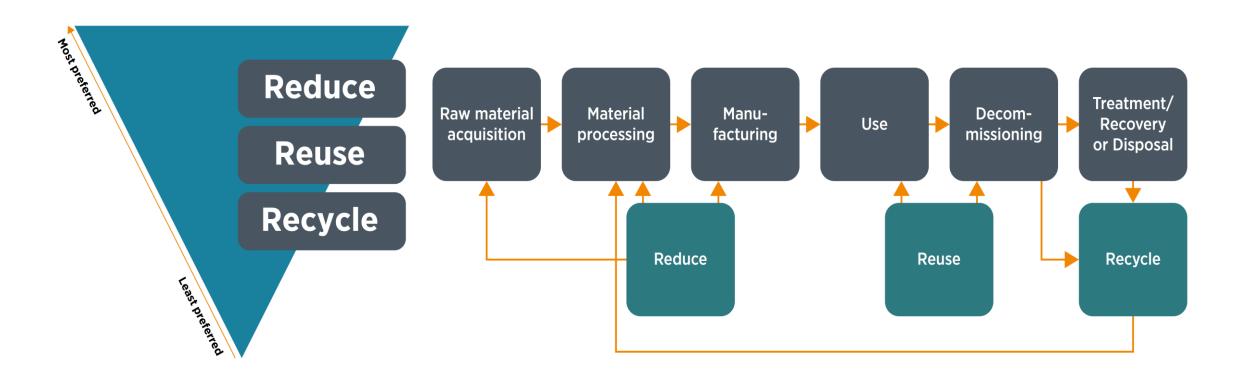
Estimation on global cumulated weight of end-of-life solar PV, 2030 to 2050, 1.5°C scenario, in tonnes





Circular economy is key to address both challenges

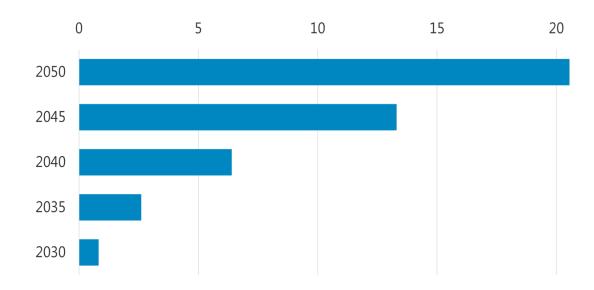
Circular economy approaches for the end-of-life management of renewables





Circular economy brings economic, social and environmental benefits

Projected market value of recyclable materials from end-of-life solar PV in the 1.5°C Scenario, in USD billion



Source: IRENA, forthcoming

- Recyclable material from endof life solar PV can create billion USD of market value
- Job creation through reusing, repairment and recycling
- Additional supply of raw materials
- Avoided environmental impacts from mining activities
- Avoided water/land/air pollution from solid waste



Policies and measures are needed to overcome barriers

Strategies and targets

- National strategy on circular economy for renewables
- Targets on recycling/reusing (%)
- Targets on longer service time or higher efficiency

Mandates and regulations

- Extended Producer Responsibility and similar schemes
- Ban of landfills
- Mandatory financial reserve for collection/treatment

Financial and fiscal incentives

- Grants and funds for circularity-based renewables
- Technology innovation for reduce/reuse/recycling
- Funding for reusing and recycling demonstration projects

Data, platform and guidelines

- Data on renewable products and projects that are accessible for all market players
- Digital platform for reporting, verification and tracking
- Industry guidelines on end-of-life management





THANK YOU!

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