

EN  
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Answer given by Mr Moedas  
on behalf of the Commission  
(5.7.2018)

Commercial photovoltaic (PV) panels do not contain rare earth elements (REEs). Silicon PV referred to as "first generation PV" accounted for about 94% of the total PV production in 2016<sup>1</sup> with "thin-film" or "second generation PV" making up the remainder 6%. Thin-film PV may contain metals like gallium or indium that are scarce but not REEs.

The permanent magnet synchronous generator (PMSG) wind turbine technology uses REEs. About 23% of the global wind installed capacity in 2015 was using this PMSG technology; the remaining 77% were of conventional electromagnet generators based on magnetic steel and copper.

1. The Commission supports through its Research Framework Programmes the development and demonstration of sustainable, recyclable, reliable and cost-effective PV and wind technologies. Several Horizon 2020<sup>2</sup> research projects explore the direct substitution of REEs in permanent magnets or the design of generators with less REEs. To address the issue of supply risks to critical raw materials (including REEs), the Commission has set up the "Raw materials initiative" and the "European Innovation Partnership on Raw Materials"<sup>3</sup> to promote their recycling in the entire value-chain and their efficient use in product design.

2. The Commission promotes PV and wind technologies in their research, development and demonstration phase. Their deployment is carried out by the market, with support measures defined by the Renewable Energy Directive, now under revision.

3. REEs are essential to many industries and their demand is growing. REEs are imported into the EU mainly from China. As EU and China are members of the World Trade Organisation such trade takes place within WTO rules.

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<sup>1</sup> <https://www.ise.fraunhofer.de/content/dam/ise/de/documents/publications/studies/Photovoltaics-Report.pdf>

<sup>2</sup> The EU Framework Programme for Research and Innovation (2014-2020)

<sup>3</sup> <https://ec.europa.eu/growth/tools-databases/eip-raw-materials/en/content/european-innovation-partnership-eip-raw-materials>