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RENEWABLE ELECTRICITY IN MALTA: A QUESTION OF SOURCES

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BOX 2: RENEWABLE ELECTRICITY IN MALTA: A QUESTION OF SOURCES¹

Malta had committed to reach a target share of energy from renewable sources of 10.0% by 2020 and 11.5% by 2030 in gross final consumption of energy.^{2,3} Focusing on the electricity component of energy consumption, renewable electricity production in Malta reached around 8.0% of the total by 2019, falling short of Malta's renewable energy targets. In 2020, Malta had to purchase €2.0 million in renewable energy credits from Estonia to reach its EU targets for 2020, and it had previously also entered a €1.4 million 7-year deal with Bulgaria to cover the years 2013 to 2020.⁴

This box looks at electricity supply in Malta and adjusts the total amount of electricity supplied in Malta with an imputation of the true underlying sources of production for electricity imported via the interconnector through the Italian electricity grid.

The production of renewable energy in Malta, as a share of electricity supply, has been increasing strongly over recent years (see Table 1).⁵ While it stood at 4.4% in 2015, it rose to 8.2% by 2019 – almost doubling. This was supported by the adoption of solar energy, which accounted for more than 97.0% of total renewable energy production in Malta in 2019. This push probably benefitted from policy initiatives to subsidise and promote the installation of solar panels in residential, commercial and public spaces. While commendable, this effort still fell short of achieving Malta's renewable energy targets.

When looking at gross local electricity production alone, the renewable element exceeded the 10.0% threshold since 2016, although this share decreased from 15.9% in 2016 to 10.5% in

Table 1
ELECTRICITY SUPPLY BY YEAR

(Megawatt-hours)

	2015	2016	2017	2018	2019
Power Plants	1,203,236	720,834	1,479,721	1,763,485	1,857,984
Renewable sources	101,693	136,251	172,059	197,833	218,059
Gross production	1,304,929	857,085	1,651,779	1,961,318	2,076,043
Own use (Power Plants)	63,901	50,542	49,262	50,210	58,623
Net production	1,241,028	806,543	1,602,517	1,911,108	2,017,420
Imports (balance)	1,053,981	1,526,689	897,066	631,293	656,756
Exports (balance)	0	0	35,695	10,549	20,451
Electricity supply	2,295,009	2,333,231	2,463,888	2,531,852	2,653,725

Source: NSO NR161/2020.

¹ Prepared by Reuben Ellul, Principal Economist at the Economic Analysis Department at the Bank. The views expressed in this article represent those of the author and should not be interpreted to reflect those of the Bank. The author would like to thank Mr Alexander F. Demarco and Dr Aaron G. Grech for their comments and suggestions. Any remaining errors are the author's own.

² See Annex 1, [Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC \(Text with EEA relevance\)](#).

³ Ministry for Energy and Water Management. (2019): *Malta's 2030 National Energy and Climate Plan*.

⁴ *Times of Malta* (2020-01-25): "Malta must pay Estonia €2 million to reach renewable energy targets".

⁵ See NSO News Release 161/2020.

2019. This suggests that in local production terms, no progress has been made in increasing the renewable element share.

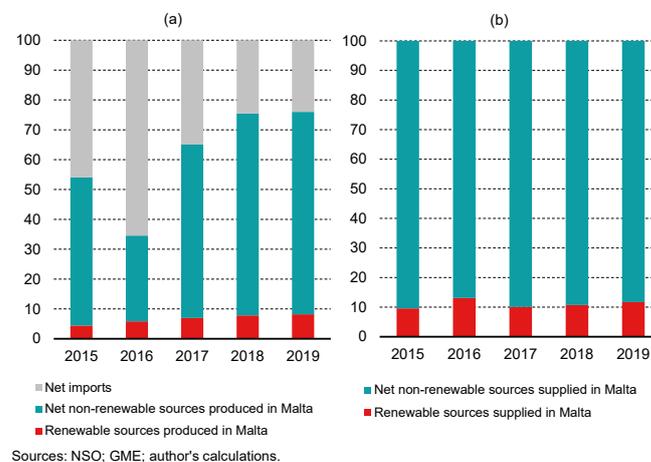
Transmitted electricity sources

However, the picture described above changes once one accounts for the different sources of electrical energy supplied to Malta via the interconnector.⁶ The Italian Power Exchange managed by the Gestore del Mercato

Elettrico (GME) publishes high frequency data for power supplied in its network, detailing times, loads and – crucially for this analysis – the estimated sources of the electricity being transmitted over the network towards a virtual zone for any given moment. For example, 14.8% of all electricity transmitted to Malta in 2019 derived from renewable sources. By summing up the proportion of electrical energy from renewable sources being transmitted to Malta via the interconnector, one can see the true environmental footprint of Malta's electricity demand.⁷

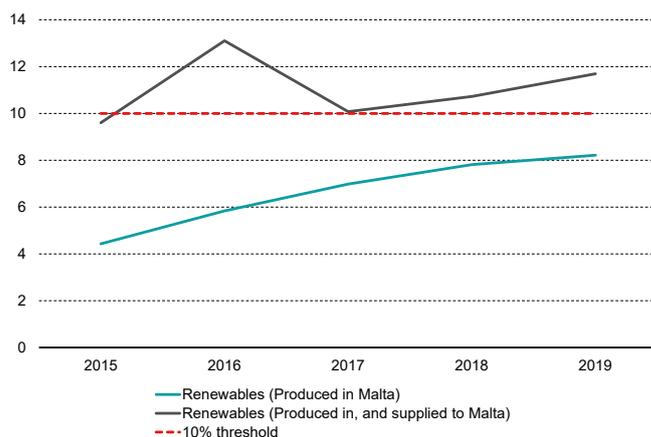
As Chart 1a shows, Malta appears to be making steady progress towards the 10.0% target, even if by 2019 this was not reached on the basis of renewable electricity sources produced in Malta alone. In Chart 1b, the net electricity import components are disaggregated into renewables and non-renewables. Using this simple accounting procedure – which matches the electricity source with the electricity imported by Malta – it appears that in almost all the five years to 2019, Malta would have

Chart 1
ELECTRICITY SUPPLY BY SOURCE
(percentage share of total)



Sources: NSO; GME; author's calculations.

Chart 2
SHARE OF RENEWABLE ENERGY IN ELECTRICITY SUPPLY
(percentage of total)



Sources: NSO; GME; author's calculations.

⁶ This refers to the Sicily-Malta electricity interconnector which was put in service in March 2015.

⁷ For the purposes of this analysis, renewable sources of electricity follow the GME classifications of *Fer - Other renewable energetic sources*, *I.Modulazione - Basin hydro power plant and I.Fluyente - Run of the river*. The category *I.Pompaggio - Pumped storage* is excluded in line with Article 5, Par. 3 of Directive 2009/28/EC of the European Parliament and of the Council.

exceeded the 10.0% threshold for electricity being supplied from renewable sources (see Chart 2).

Some caveats must be made regarding the data. The sources are estimates arrived at by GME analysts, and the amount of electricity being transmitted from Italy may not always match readings recorded in Malta, due to electricity losses in transmission. Other caveats relate to measurement errors and assumptions regarding the netting of electricity exports from Malta, and the electricity use being consumed by the Maltese power plants for own use.

Policy implications and recommendations

While this approach sheds light on the interconnectedness of countries sharing an international grid and allows for a clearer picture regarding Malta's environmental footprint, it should not be taken as a vindication of Malta's energy policy. Further efforts are encouraged to even exceed Malta's set targets, and to use the existing natural resources – whether solar, wind, other natural endowments or a combination of these – to shift Malta strongly into renewable energy production. Moreover, this simple analysis focuses on electricity generation and supply, which is only part of gross final energy consumption. It is the latter, rather than the former, which has a 10.0% renewable energy threshold requirement.

In terms of policy recommendations, provisions exist for EU Member States to set up shared projects in this field, with the positive impacts from renewable electricity projects being shared between participating countries. Transfers between participating countries are allowed under EU law. Similar arrangements may also be entered into with countries outside the EU for investment. Moreover, the EU recently introduced a new renewable energy financing mechanism, which considers closer cooperation between States on renewable projects, focusing on a more collective approach recognising the benefits in terms of lower emissions in both the countries contributing to projects, and to those hosting them.⁸

Finally, the data show that Malta has made bolder steps in shifting its supply towards renewable energy than would be indicated by a cursory reading of statistics. With further investment, Malta may soon achieve its set targets outright, at least in respect of electricity generation.

⁸ See https://ec.europa.eu/energy/topics/renewable-energy/eu-renewable-energy-financing-mechanism_en and Commission Implementing Regulation (EU) 2020/1294 of 15 September 2020 on the Union renewable energy financing mechanism (Text with EEA relevance) C/2020/6123.