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CONSULTATION RESPONSE SEPTEMBER 2017

ITALY'S NATIONAL ENERGY STRATEGY E3G COMMENTS TO THE CONSULTATION PROCESS

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E3G welcomes the draft National Energy Strategy (NES) that sets out Italian energy plans up to 2030. A strong strategy will allow for optimised investment and a sustainable energy system. The NES is key to the implementation of EU policy objectives and the implementation of Italy's international obligations such as the Paris climate change agreement. To best achieve this, E3G makes recommendations in the following four areas:

- > Future scenarios
- > Coal phase out
- > The role of gas in the energy mix
- > Market design and flexibility in the energy market



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Future scenarios

The strategy as presented sets out two main scenarios: the base and the intermediate policy scenario (p. 35). The former is neither compliant with the 2014 European Council conclusions that set out the 2030 targets nor the recently proposed Clean Energy for All package. The latter is compliant with this package but insufficient to prepare the grounds to comply with Italy's obligations under the Paris climate change agreement, ratified in November 2016.

The Paris agreement requires "...to achieve a **balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases** in the second half of this century." (Art.4(1)). To this end it requires parties to regularly update their contributions and revise their targets upwards. The next revision is expected ahead of 2020, in response to the UNFCCC stocktake in 2018. It is vital that the national energy strategy anticipates those upwards revisions to avoid abortive or stranded investments.

The energy sector accounts for about a third of the country's emissions making this strategy a major vehicle to delivering these commitments. **To this end we recommend that it uses a scenario that enables Italy to meet its international commitments by 2050.** This requires it to use as reference for planning new infrastructure scenarios that meet EU targets and commitments, including a scenario that increases ambition every five years as foreseen by the Paris Agreement.

Coal phase-out

Introduction

In April 2017, E3G published a briefing paper ‘The coal phase out transition: Italy’s leadership opportunity’.¹ The paper identified how Italy was being left behind by its G7 peers and other OECD countries. We highlighted that:

- > Across Europe, coal power plants are ageing. More than half of them can be expected to close before 2030 due to age and / or poor environmental performance in any case. They will no longer be replaced with new coal plants, making the need for a transition plan a growing necessity for all countries and utility companies.
- > Italy is in the curious position of having helpful energy market dynamics and a headline commitment to action from its major utility Enel, but an almost complete absence of policy action by government.
- > Enel successfully repositioned itself as a clean energy champion ahead of its competitors, thereby escaping the worst economic impacts experienced by other utilities. But Enel is still a significant user of coal and has failed to set out an explicit plan for ending coal use. It needs to accelerate the shift away from coal and into clean energy and smart systems.
- > The Italian government must provide a fair policy framework that incorporates all remaining coal power plants. The new National Energy Strategy and EU National Energy & Climate Plan processes provide the perfect opportunity for Italy to set out a coal phase out plan for the next decade.

In this context, E3G warmly welcomes the inclusion of the coal phase out scenarios within the National Energy Strategy Consultation. This is an important step forward that should be applauded.

In this consultation response E3G sets out comments on the proposals that we believe would strengthen the delivery of this essential policy and secure a positive position for Italy within European and International efforts on coal.

Phase Out Scenarios

The ‘inertial’ and ‘partial’ scenarios for coal phase out are clearly insufficient in the context of a complete coal phase out in all OECD countries being required by 2030² and the continued growth in renewables envisaged under the strategy and Europe’s 2030 goals.

The ‘complete’ scenario for coal phase out is therefore the only one that should be considered by policy makers. Italy needs to clearly define this complete phase out in order to provide market regulations and government policy measures that provide a fair framework for action by all coal power plant operators in Italy. The scale of remaining coal generation in Italy requires a policy framework to facilitate closure decisions by utility companies and support investment in clean energy and smart grids.

¹ The E3G briefing paper is also submitted to this consultation for reference.

² See Climate Analytics <http://climateanalytics.org/publications/2016/implications-of-the-paris-agreement-for-coal-use-in-the-power-sector.html>



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The 'complete' scenario currently provides a window for coal phase out during the period 2025-30. The largest benefits from reduced CO2 emissions and air pollution will come from achieving the coal phase out by 2025. By way of comparison, the UK will close 14GW of coal by 2025, with Italy having significantly less capacity with currently 8GW in operation.

We believe that the reductions of CO2 emissions from coal phase out presented in the National Energy Strategy are underestimates in comparison to past operations. We also note that no reference is made to the public health benefits from reduced air pollution that would follow the reduced operation and subsequent retirement of coal power plants. Both of these elements should be fully incorporated into the assessment of benefits accruing from coal phase out.

The 'complete' scenario envisages significant additional investments in gas infrastructure and power generation, in particular for Sardinia. In light of the continuing reductions in the costs of renewable energy, we recommend that the replacement of coal with solar and wind should be prioritised instead as part of the move to a smart and flexible power system (as discussed elsewhere in E3G's response).

Policy Measures

The past decade of experience of the EU Emissions Trading System shows that it will not be sufficient for policy makers to rely on carbon trading as a means of phasing out coal. Additional policies are required, as recommended by WWF Italy in their recent study of coal phase out options.³ Higher carbon prices through a dedicated mechanism can help to reduce generation from existing coal power plants (as has occurred recently in the UK). However the provision of a clear timetable for phase out can assist by giving greater investor certainty and a transition period for workers.

E3G recommends that Italy should therefore introduce a firm end date of 2025 for coal power generation. Ahead of this it should:

- > introduce an additional carbon pricing instrument to increase the costs of coal generation;
- > exclude coal power plants from receipt of capacity payments, as these provide a subsidy for the continued operation of coal power plants that is contrary to the aims of coal phase out; and
- > ensure full implementation of the Industrial Emissions Directive and new BREF standards on air pollution that are required by 2021.

We highlight that the introduction of an additional carbon price measure would provide financial resources that could be dedicated to assisting workers and communities to transition away from coal and towards clean energy and sustainable economies. This could be created as a 'Just Transition Fund' to provide clarity on the availability of resources.

³ See http://awsassets.wwf.it/panda.org/downloads/rapporto_carbone_wwf_16_02_17_def.pdf



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The position of Enel

In March 2015 Enel made a commitment to gradually phase out its use of coal to support its pathway to becoming a carbon neutral power company by 2050. As the owner of seven of the last 11 coal plants in Italy, Enel has a particular responsibility to accelerate this action. Enel subsequently announced a plan to close 23 power plants in Italy over the coming years as a means of reducing overcapacity, however this was a missed opportunity for action on coal as the plan includes just three of the smallest and oldest coal plants. More positively, Enel CEO Francesco Starace has recognized that Enel's most modern coal plant will likely have shut by 2030.⁴

The Italian government holds a 25% stake in Enel, so there is a particular responsibility on Enel to take a lead. Indeed, over recent years Enel has successfully repositioned itself as a leader in renewables and smart electricity systems, and has performed much better than other European utilities that failed to anticipate this transition. Continued substantial use of coal is a risk factor for Enel. Back in March 2015, Enel pledged to phase out new investments in coal. Now, Enel needs to act to phase out existing coal power plants – not only in Italy but also Spain, Portugal, Chile, Slovakia and Russia.

Enel CEO Francesco Starace is President of the European Union of the Electricity Industry EURELECTRIC for the period 2017-19. EURELECTRIC has a Presidency Manifesto for this period that states its commitment to: 1. Change Mindset; 2. Embrace the Future; and 3. Transform the Present. Unfortunately, at present EURELECTRIC and Enel are both lobbying strongly against the European Commission's proposals that would restrict access to capacity payments for high carbon generating capacity.⁵ It is inappropriate for Enel to take such a position that would prolong the life of coal power plants and inhibit investment in clean energy. We urge the Italian government to support the European Commission's proposals and to ensure that there are restrictions on coal within any capacity mechanisms in the Italian domestic market.

Conclusion

The inclusion of coal phase out scenarios within the National Energy Strategy consultation is positive. The final version of the Strategy must focus on the 'complete' scenario and deliver a clear end date for coal use of 2025. Policy measures must increase the costs of coal generation and restrict access to capacity payments.

Within the G7, Italy will face similar transition challenges to Canada and the UK over similar timescales. Using its 2017 Presidency as a starting point, Italy should work with its peers to share best practice and catalyse a broader coal phase out coalition with a growing set of countries, provinces and utilities.

⁴ See <https://www.bloomberg.com/news/articles/2015-10-11/the-ceo-and-the-activist-meet-the-renewable-energy-odd-couple>

⁵ See p24 <http://www.eurelectric.org/media/325605/eurelectric-proposals-for-amendments-electricity-regulation-june-2017.pdf>

The role of gas

Background

Across Europe, demand for gas has been falling since 2010. Actual European demand in 2015 lies considerably below the assumptions made in the projections. Europe's gas consumption was 357.9 mtoe in 2015⁶ (or 397.3 bcm using a conversion factor of 1.11 as used by the European Commission). This is significantly below the 473 bcm used in Fig. 30 of the strategy. This falling trend has been even more prominent in Italy, where gas consumption peaked in 2005 and has since then been declining. It declined by 19% between 2010 and 2015 alone.

The strategy suggests that gas demand in 2020 and 2030 would increase beyond today's consumption, further increasing the already prevalent role gas currently plays in electricity generation in Italy. However, energy efficiency measures in line with the EU's Clean Energy for all Package are likely to significantly drive down the demand for electricity. An energy efficiency target of only 27% reduction in energy consumption compared to the EU's business-as-usual projections for 2030, is expected to decrease gas demand by 16% compared to the same reference.⁷ Currently, both European Council and the European Parliament are envisaging higher energy efficiency targets.

Prioritising energy efficiency to drive down overall demand is also expected to deliver significant cost savings: The latest energy efficiency impact assessment by the European Commission estimates that increasing energy efficiency target from 27 to 30% would save over €50bn over a ten-year period (2021-2030). When taking into account the EU's 2050 roadmap, ENEA, Italy's national agency for new technologies, energy and sustainable economic development, expects that renewables will start to replace gas due to price advantages turning new gas infrastructure into stranded assets.⁸

Energy security is a key consideration for energy infrastructure development, in particular for countries like Italy that are on the periphery of the European internal market. Gas plays a declining but significant role in the Italian energy mix and import dependency is high (ca. 90% of consumption). Yet, energy security concerns are marginal: the high range of supply options (LNG from a number of countries and pipeline imports sourcing gas from Algeria, Norway, Russia) and significant underground storage covering about a quarter of annual consumption (around 12.8bcm of commercial and 4.6bcm of strategic reserve according to NES) make the system resilient. Modelling demonstrates how Italy is resilient to a number of disruption scenarios – such as the unavailability of its largest import infrastructure, dependence on Russian supply, a crisis in Ukraine as well as extreme weather scenarios (cf. ENTSO-G's ten-year network development plan and Energy Union Choices study⁹)

The NES expresses its support for increasing import diversification and increased domestic transport capacity of gas. This is at odds with the current infrastructure situation:

⁶ Eurostat 2017

⁷ https://www.e3g.org/docs/E3G_Trends_EU_Gas_Demand_June2015_Final_110615.pdf

⁸ https://www.prognos.com/uploads/tx_atwpubdb/20170407_Prognos_Report_Low_Carbon_options_2016_19.1.17.pdf

⁹ https://www.entsog.eu/public/uploads/files/publications/TYNDP/2016/entsog_tyndp_2017_ES_web.pdf and http://www.energyunionchoices.eu/wp-content/uploads/2016/07/E3G_More_security_lower_cost_-_Gas_infrastructure_in_Europe.pdf



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- > Gas consumption peaked in 2005 without posing any capacity problems, leaving large idle capacity that can be drawn upon if needed.
 - > Most Liquefied Natural Gas (LNG) terminals in Italy are underutilised. If needed, they can accommodate significant additional import needs (total capacity is ca 15bcm with current infrastructure, around 30% of annual consumption).

Recommendations:

- > Recalibrate gas projections to start with 2015 actuals instead of projected 2015 figures.
- > Prioritise energy efficiency investments over building additional infrastructure.
- > Make better use of the existing gas infrastructure to maintain resilience and to avoid investing in stranded assets.



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Smart, Flexible Power Systems

Power system flexibility has always been critical given the limitations on electricity storage and the need to balance supply and demand in real time. However, as we look forward, the importance of flexibility will increase. Decarbonisation of the power sector will inevitably require the deployment of large quantities of renewable generators whose output depends on availability of natural resources rather than the varying demands of consumers. Moreover, decarbonisation of the heating, cooling and transport sectors will involve some degree of electrification. The power system will therefore be required to replace part of the energy storage capability in these sectors that is currently provided by fossil fuels.

There is broad consensus that the potential for demand side response to deliver flexibility is significant and, as yet, largely unexploited. However, the ability to realise this potential is uncertain since it depends on the engagement of consumers and major changes in the way they use energy. It is, therefore, likely that the provision of demand side response will only begin to increase significantly as building automation systems are deployed which will allow consumption to be adjusted with little or no active participation on the part of the consumer.

The Italian Government must respond to the increasing requirement for power system flexibility and begin to consider the energy system as a whole rather than focus on individual sectors. In particular:

- > There must be significant progress in the deployment of new sources of flexibility over the next few years to allow the efficient integration of renewable resources.
- > Market arrangements must be designed that ensure efficient deployment of flexibility between energy and networks and between local and national levels must be established to support the decarbonisation of heat and transport sectors during the 2020's and beyond.

Power market liberalisation has been based on the principle that cost reflective market pricing is the most effective way to drive optimal investment and operational behaviour and to lead to efficient outcomes. However, there are concerns that the new products and capabilities that are required to increase system flexibility will not emerge efficiently purely in response to accurate market price signals, in particular:

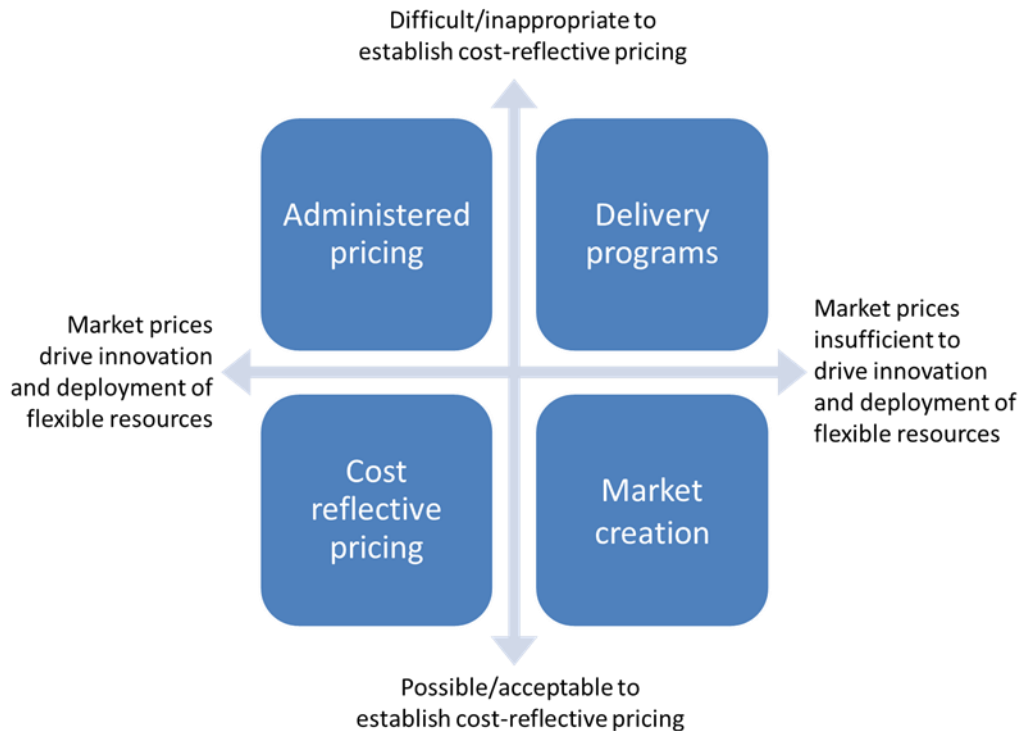
- > There are significant obstacles that prevent promising immature technologies from achieving mass market scale.
- > Behavioural economics confirms that individual consumers (business and household) are unlikely to behave as 'rational economic agents' and will not adjust purchasing behaviour to achieve the most economically advantageous outcome.
- > It is extremely unlikely that it will be possible to design markets that efficiently allocate flexible resources between energy balancing and network investment and between local and national levels such that it leads to system-wide efficiency.
- > There are political limitations on the use of market pricing to achieve behavioural change on the part of the mass consumer market since prices that rise sufficiently to



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attract action from those consumers who can respond may be extremely painful for those consumers who are unwilling or unable to respond.

The chart below sets out these issues diagrammatically. It can be seen that relying on cost reflective pricing is only appropriate if there is both a firm belief that market prices will drive the necessary innovation in, and deployment of, flexible resources and that it is both practical and politically acceptable to establish such a pricing regime. In all other circumstances, different approaches are required.



The evidence to-date suggests that it is not reasonable to assume that market pricing alone will be able to drive innovation and deployment of flexible resources at the rate and to the extent required. However, the extent to which this can be effectively addressed with some targeted market creation options (e.g. product standards, obligations on suppliers and/or network operators) is, as yet, unclear. It is also unclear how market arrangements should be adapted for the new situation and the optimal market design will depend on the relative value of the flexible resources in energy balancing versus offsetting infrastructure, and at transmission level versus distribution level, along with the overall impact on individual consumer bills.

The challenge for policy makers is to achieve tangible progress towards a smart, flexible power system whilst leaving space for innovation in technologies and market design. We propose three key policy strands to help meet this challenge:

1. A targeted package of market creation measures including product standards and obligations on market participants.



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2. A programme of Government funded city scale pilots to create smart energy zones with low carbon heating and cooling and electric vehicle and supporting infrastructure.
 3. Establishing a new smart power delivery body to oversee this combined program of market creation and city scale pilots operating under a clear set of statutory objectives.



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About E3G

E3G is an independent climate change think tank operating to accelerate the global transition to a low carbon economy. E3G builds cross-sectoral coalitions to achieve carefully defined outcomes, chosen for their capacity to leverage change. E3G works closely with like-minded partners in government, politics, business, civil society, science, the media, public interest foundations and elsewhere. In 2016, E3G was ranked the number one environmental think tank in the UK.

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