

# Enel/Endesa

## **A briefing for investors, insurers and banks**

This briefing paper presents analysis and recommendations to assist investors and banks in achieving a coal phase-out from the Enel group in line with the climate targets of the UN Paris Climate Agreement and protecting citizen's health.

Enel owns a 70.1% majority share in Endesa. Both utilities are addressed together in this briefing, but the findings are of interest for investors that finance either or both Enel and Endesa.

The briefing gives an overview of the two utilities' power mix and existing coal plant fleet; financial risks that the power assets are confronted with; pathways for aligning the utilities' coal plant fleet with the Paris Agreement; and actions that banks, insurers and investors are taking or must take.

### Enel and Endesa at a Glance:

- Endesa, a separately listed company with outstanding debt, is more impacted by investor policies and its share of coal power production (31.7%) is above the 30% threshold adopted by many investors.
- Enel will be affected by the Italian commitment to phase out coal by 2025.
- The results of Spanish debate about a possible coal phase-out could influence Endesa's operations.
- Possible increases in the EU ETS CO<sub>2</sub> price might further affect the profitability of their coal power plants.

### Investors, insurers and banks should require Enel and Endesa to:

- Commit to align their business models with the Paris Agreement and, more concretely, to adopt a time-bound climate science-based target built on forward-looking climate-scenario analysis. Enel has adopted such a science-based target.
- Put an immediate end to capital expenditure for new coal plants, the purchase or any retrofitting of existing coal plants that lead to life-extensions – in particular for its coal plants in Spain.
- Publish a clearly articulated and detailed roadmap for the gradual closure (not sale) of existing coal plants, ending at the latest in 2025. This timeline takes into account that the Enel group has 6.9GW of coal in Italy, which has adopted a coal-phase out deadline of 2025 – and applies the same deadline for Endesa's assets in Spain, which operates an old coal fleet. Enel and Endesa can also draw on granular analysis provided by CDP and Greenpeace.
- Investors, insurers and banks should also adopt 'no coal policies' along the lines of the 'principles and approaches for impactful public coal policies' that were developed by the Europe Beyond Coal campaign (see chapter Recommendations).



# Table of Contents

1.	Introduction.....	4
2.	Facts: power mix and coal plant fleet of Enel and Endesa.....	5
3.	Policy, financial and legal risks .....	8
4.	Future: Enel and Endesa alignment with the Paris Agreement .....	13
5.	Investor, insurer and bank action .....	15
6.	Recommendations.....	18

# 1. Introduction

In the UN Paris Climate Agreement, 195 countries committed to curb the current emissions trajectory in accordance with climate science. This commitment translated into an objective to ‘hold the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C,’ and ‘make finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development’.

The implications of the Paris Agreement for coal and renewable power are clear. Investors have recently acknowledged climate science research that supports the need to phase out coal by 2030 within member countries of the Organisation for Economic Cooperation and Development (OECD) and the European Union; by 2040, in China; and by 2050, in the rest of the world. More recent analysis by the International Energy Agency (IEA) ‘beyond 2°C scenario’ indicates that non-OECD countries should phase out production from coal power even earlier, by 2040. Investment in renewable power has to increase drastically.

There is a growing consensus amongst leading financial institutions globally that the world is moving towards a low carbon economy, and that as a result, coal power assets will be stranded, and constitute growing financial and reputational risks.

The recent Intergovernmental Panel on Climate Change (IPCC) report reminds us that there is no time to waste if we want to stop runaway climate change and that significant efforts are required if we are serious about limiting global warming to 1.5°. According to the report, the primary energy from coal must be reduced by 61-78 % globally in 2030 (% rel to 2010) globally in the scenarios with limited or no overshoot.

Furthermore, the Italian government has announced a 2025 deadline for coal phase out in domestic energy use. As the Italian state is the main shareholder of the Enel group, the company is under increased pressure to demonstrate consistency. Similarly, the Spanish government has recently shown a willingness to discuss a coal phase out.

## 2. Power mix and coal plant fleet of Enel and Endesa

### Enel and Endesa's strategic plans

The Enel group's 2017-2019 strategy is built around 'seven pillars': digitalisation, operational efficiency, industrial growth, customer focus, group simplification, active portfolio management and shareholder remuneration. The group has a large international presence. Enel has generation and distribution assets in Europe, Latin America, North America and Russia.

In its 2017-2019 strategic plan, the Enel group has prioritised reductions in maintenance capital expenditure and operating expenditure. Maintenance capital expenditure competes directly for company cash with net growth capital expenditure. We note Enel's ambitious growth plans in its networks (smart meter rollout and digitalisation of generation assets) and renewables businesses. To achieve these growth goals, and assuming no additional recourse to debt, it will have to limit maintenance capital expenditure (e.g. for coal plants) as far as possible.

The Enel group has climate and coal-related commitments in place:

- It has set a carbon neutral commitment to 2050 with a roadmap for emission reductions, and has committed to set a science-based CO<sub>2</sub> reduction target.
- Under its strategic plan, the Enel group anticipates €3 billion in plant disposals, including thermal generation assets, by 2019. For reputation and/or economic reasons, it makes more sense to implement a phased closure plan of more polluting assets, rather than to sell them.
- It has a forward-looking approach to coal retirement in Italy: under its Future-e programme, it foresees decommissioning 13 GW of older thermal generation, including coal, and finding new uses for these 23 fossil fuel power plant sites.

The **Enel group has not put in place a detailed asset-level coal phase-out timeline**. There are arguments for the group to do so, however, most notably in Italy and Spain.

In **Italy**, the government has committed to phase out coal by 2025. Torrealvaldliga Nord and Brindisi are among the 30 most polluting power plants in Europe, and their profitability will be challenged by rising carbon costs. While Brindisi Sud is currently classified as indispensable by the network operator, its importance will reduce over time due to new network infrastructure. The plant is also encountering legal challenges on environmental grounds. Enel's remaining fleet consists of dispersed, smaller and less competitive assets.

**A particular concern with regards to the Enel group's coal fleet lies with Endesa.** Endesa states that it is the leading company in the Spanish electricity sector and the second operator in the Portuguese electricity market. Endesa owns more than half of Spain's 10 GW of coal-fired power plants. While in some ways Endesa's 2017-19 strategy fits that of the Enel group,

there appears to be a conflict regarding Endesa’s support for coal power. Endesa sees a benefit in keeping older fossil fuel generation online beyond 2030 in order to integrate renewables. It notes in its strategic plan that ‘conventional generation is key to secure a successful and smooth transition. [We must] keep nuclear and efficient thermal plants beyond 2030 to secure a smooth transition avoiding new inefficient fossil investments.’ Three arguments undermine Endesa’s argument for supporting coal:

- From an environmental perspective, coal is an important source of CO2 emissions and other pollutants. The rising carbon price will exacerbate risks related to the former.
- From a grid security perspective, Endesa’s combined-cycle gas turbine power plants operated at exceptionally low capacity factors in 2017 (12% on average). Capacity factor refers to actual generation compared with the theoretical maximum. There is therefore ample existing gas generating capacity, both for Spain and for Endesa, to accommodate coal power retirements, without having to resort to building new gas power infrastructure. Greater penetration of zero marginal cost renewables will also hollow out the coal power plant load profiles and hence operating rates, progressively undermining profitability.
- Growing interconnection with France can be expected to increase available capacity and reduce wholesale power prices in Spain, further rebutting energy security arguments for supporting coal, and undermining the investment case for environmental retrofits of older coal power plants to comply with EU air pollution standards (see below).

In November 2018, Endesa’s CEO confirmed a plan to close down two plants in 2020: the 1.1-GW Compostilla and the 1.0-GW Teruel, while power plants Pontes and Litoral (Carboneras) should be retrofitted. Enea will also invest in upgrades for its power plants in the Balearic Islands.

## Enel and Endesa’s power mix and coal plant fleet

Table 1: Enel group power mix – including Endesa power assets (Source: Enel)<sup>2</sup>

	Coal	Renewables	Large hydro	Gas	Nuclear	Total
Capacity (GW, %)	16.0 GW 18.8%	10.5 12.4%	27.8 32.7%	27.3 32.2%	3.3 3.9%	84.9 GW
Generation (TWh, %)	70.5 TWh 27%	26.3 TWh 13%	55.4 TWh 22%	71.2 TWh 28%	26.4 TWh 10%	249.9 TWh

Table 2: Endesa power mix (Source: Enel)<sup>3</sup>

	Coal	Renewables	Large hydro	Gas	Nuclear	Total
Capacity (GW, %)	5.2 22.9%	1.6 7.0%	4.8 21.1%	7.9 34.8%	3.3 14.5%	22.7
Generation (TWh, %)	24.9 31.7%	3.4 4.3%	55.3 6.4	18.8 24%	26.4 33.6%	78.6

<sup>1</sup> <https://www.spglobal.com/platts/en/market-insights/latest-news/electric-power/112118-spains-endesa-sees-coal-nuclear-plants-operating-beyond-2030>

<sup>2</sup> Enel, Quarterly bulletin 2017.

<sup>3</sup> Ibidem

Table 3: Enel and Endesa coal plant fleet (Source: European Coal Plant Database)

Plant name	Utility	Capacity (MW)	Commissioning year of first unit	Country	CO <sub>2</sub> (Mt, 2017, estimate)
Alcudia II	Endesa	510	1981	Spain	2,7
Andorra	Endesa	1 101	1979	Spain	4,8
Anllores <sup>4</sup>	Endesa	365	1982	Spain	0,9
As Pontes	Endesa	1 469	1976	Spain	8,1
Bocamina	Endesa	498	1970/2012	Chile	1,6
Compostilla II	Endesa	1 052	1972	Spain	2,8
Litoral	Endesa	1 159	1984	Spain	5,5
Patache	Endesa	154	1998	Chile	1,4
Bastardo	Enel	150	1989	Italy	0,02
Brindisi Sud	Enel	2 640	1991	Italy	6,5
Fusina	Enel	976	1964	Italy	3,7
La Spezia	Enel	600	1967	Italy	2,0
Novaky	Enel	252	1957-1944	Slovakia	1,8
Reftinskaya GRES	Enel	3 800	1970	Russia	15,6
Sulcis	Enel	590	1986	Italy	1,1
Torrevaldaliga Nord	Enel	1 980	2009	Italy	9,7
Vojany	Enel	440	1965	Slovakia	0,6
<b>TOTAL<sup>5</sup></b>		<b>17 495</b>			<b>68,2</b>

<sup>4</sup> Endesa has a 33% ownership share in the Anllores coal plant, with the remaining 66% under ownership of Gas Natural Fenosa. Hence, while the capacity and CO<sub>2</sub>-emissions are presented for the whole coal plant, only 33% of this can actually be attributed to Enel/Endesa's total capacity and CO<sub>2</sub>-emissions.

<sup>5</sup> Taking in account that Enel/Endesa only owns 33% of the Anllores coal plant, the corresponding share of the plant's power capacity and CO<sub>2</sub>-emissions are included in the group's total power capacity and CO<sub>2</sub>-emissions.

## 3. Policy, financial and legal risks

### The risk taxonomy

The industry-led Financial Stability Board (FSB) Task Force on Climate-related Financial Disclosures (TCFD) has forged unprecedented convergence across industry and G20 governments on climate-related financial risks. The coal power sector is particularly sensitive to risk that arises from the transition to a low-carbon economy – which is defined by the FSB TCFD in terms of policy changes, legal challenges, technology shifts, market developments and reputation.

The paragraphs below highlight how Enel and Endesa’s coal fleet are subject to such risks.<sup>6</sup>

### National coal phase-out commitments constitute policy risk

The Enel group has 6.9 GW of coal plants in Italy, which is one out of 9 countries that have committed to phase out coal (2025) or are discussing doing so. The Italian coal phase-out is a clear political intention that will see a number of legal and market instruments in place well before 2025. This dissuades further investments in maintaining coal plant operations, as these assets will become stranded once a legal instrument is adopted.

The new Spanish government has also shown a willingness to discuss a coal phase-out. The government created a Ministry for Ecological Transition, merging the former Ministries for Environment and Energy, and facilitating the coordination of highly interdependent agendas in the fight against climate change. Teresa Ribera, former director of PSOE's Advisory Council for the Ecological Transition (CAPTE), has been appointed as minister. The Advisory Council had delivered a report indicating a coal phase-out in Spain by 2025, and although the report is not a government plan, the Minister has mentioned the target as an indicative date in several interviews. She also indicated, on 11 July at the Congress of Deputies, that the ministry's work would follow through on "the commitment to an indispensable, urgent energy transition", and to this end, its number one priority would be to present, before the end of the year, a Bill on Climate Change and Energy Transition, the Draft of a Just Transition Plan, and a Draft of Integrated National Climate and Energy Plan, following a broad discussion process and consensus.<sup>7</sup>

<sup>6</sup> For more general information see: WWF (2017), [Climate guide to asset owners](#). WWF (2017), [Asset owner guide on coal and renewable electric power utilities](#). WWF (2018), [WWF asset owner guide on coal and renewable electric power utilities](#).

<sup>7</sup> Congreso de los Diputados (2018), [Comparecencia de la Señora Ministra de Transición Ecológica \(Ribera Rodríguez\). Diario de Sesiones del Congreso de los Diputados. Comisión Transición Ecológica. Sesión Nro. 21 \(extraordinaria\), 11 de julio de 2018.](#)

Table 4: Overview of coal phase-out plans by European governments  
(Source: Europe Beyond Coal Campaign)

2021	2025	2029/30	Under discussion
France	UK	Finland	Germany
	Italy	Netherlands	Spain
	Austria	Portugal	Slovakia
	Ireland	Denmark	Hungary

The coal phase-out momentum is broader than Europe: the government of Chile, where the Enel group operates 2 coal plants, has committed to build no new coal plants and has started discussions to phase out coal.

### Rising carbon prices increase climate-related financial risks

The profitability of hard coal plants has been collapsing as coal and carbon prices have risen faster than the cost of electricity.

Carbon prices have quadrupled from about €5/tonne in May 2017, to over €20/tonne in October 2018. Enel and Endesa emitted 64 million tonnes CO<sub>2</sub> in 2017. Based on the carbon price rising from €5/tonne to €20/t, this means the Enel and Endesa annual carbon bill will have increased from €340m to €1 360m. As they received less than 1% of their permits for free in 2017, they must purchase the full volume of these from the market.

The pass-through of the carbon price into electricity will fall over time as renewable electricity penetration increases, and the electricity price is increasingly set by cheaper non-carbon sources.

The CO<sub>2</sub> price could rise even further. A report, *Carbon Countdown*, released on 21 August 2018 by Carbon Tracker, forecasts that the CO<sub>2</sub> price will rise to €25 by year-end, and €40 by 2020.

Another report by Carbon Tracker looked at the profitability of coal plants in Europe: the double impact of a higher carbon price and higher air pollution costs on Enel and Endesa's coal portfolio – which was slightly profitable in 2017 – would be significant losses by 2030.

The rising carbon price undermines the arguments by Enel and Endesa for compensation for the closure of existing coal plants, given that these assets will already be priced out the market. This is especially true for coal plants that were constructed when evidence of climate change was already apparent (e.g. Torrevadali Nord, which was built in 2009).

## Health impacts from coal burning further amplify climate-related financial risks

### Health impacts

Toxic pollutants from the burning of coal such as sulphur oxides (SO<sub>x</sub>), nitrogen oxides (NO<sub>x</sub>) and particulate matter (PM) have detrimental effects on public health. Modelling with 2016 pollution data has shown, for instance, that Enel and Endesa coal plants in the EU caused an estimated 595 premature deaths in that year.

Table 5: Modelled health impacts from Enel and Endesa coal plants in 2016 (Source: Last Gasp report, Beyond Coal Europe<sup>8</sup>)

Plant name	Company	Premature deaths (modelled, 2016 emissions)	Health costs (modelled, 2016 emissions median, Meuro)
Alcudia II	Endesa	40	65
Teruel/Andorra	Endesa	126	203
As Pontes	Endesa	88	142
Litoral	Endesa	67	108
Compostilla II	Endesa	80	129
Brindisi Sud	Enel	27	44
Torrevaldaliga Nord	Enel	61	95
Bastardo	Enel	0	0,5
La Spezia	Enel	35	54
Sulcis	Enel	10	16
Fusina	Enel	61	94

Note: Endesa owns only 33% of the Anllares plant;

### EU air pollution standards

In April 2017, European Union member states agreed to a Best Available Techniques (BAT) Reference Document (BREF) that imposes revised pollution controls on large combustion plants – including power plants larger than 50MW. The underlying goal of these pollution controls is to improve air quality by cutting emissions of toxic pollutants.

EU member states must incorporate the new, stricter pollution rules into their permit criteria for new and existing power plants, with full implementation no later than 2021. The installation time of the relevant technologies is up to 45 months. Electric power utilities will therefore need to assess immediately if it makes financial and strategic sense to upgrade coal power plants to comply with BREF.

<sup>8</sup> <https://beyond-coal.eu/last-gasp/>

DNV-GL has analysed the impact of BREF on the EU coal fleet. It finds that 82% of operational coal plants in 2021 would not comply with pollutant controls for SO<sub>x</sub>, NO<sub>x</sub> and PM. The share of non-compliant lignite plants (89%) would be significantly higher than the share of hard coal plants (78%). The total capital expenditure required to make these coal plants compliant with BREF would amount to €14.6 billion.<sup>9</sup>

Table 5 shows that the Endesa coal plants have particularly high emissions, and hence are more exposed to financial risks. This is further reinforced by Endesa's recent investment decisions:

In May 2017, the Enel group declared that it would close two Endesa coal plants in Spain: Teruel and Compostilla. According to Enel group's technical reports, the current market conditions would be insufficient to amortise the investment of €800 million needed to comply with European environmental regulations and keep the plants open from 2020 onwards.<sup>10</sup>

Nevertheless, Endesa plans to invest €400 million to achieve environmental improvements in three other polluting coal plants in Spain (Litoral, AS Pontes and Alcludia) between 2017 and 2019, to comply with the IED and BREF.<sup>11</sup> In fact, by the end of 2017, investments to the order of €39 million in Litoral and €34 million in As Pontes had been made to adapt the plants to said environmental requirements.<sup>12</sup>

A gradual elimination of coal generation in Europe (to meet objectives established by the Paris Agreement) and the development of policies that increase carbon prices have reduced the likelihood of Endesa recovering their investment in these plants, and raised the risk that these assets may become stranded. Endesa's support to coal power also runs counter to the Enel group's commitment to expand its renewable capacity, and invest in a digitalisation strategy for the period 2017 to 2019.

## Liability and reputational risks

Dynamics in Enel and Endesa's main countries of operation could pose significant legal risks to the company.

In **Spain**, the closure of power plants is regulated by Art. 53 of Law 24/2013, which states that the closure must not affect security of supply. A request for the closure of the Anllares Plant, owned by Naturgy (formerly Gas Natural Fenosa) and Endesa, has recently been approved by the REE (the operator of Spain's electrical grid) and the CNMC, on the basis that the closure does not present any threat to supply. The Secretary of State for Energy, José Domínguez Abascal, has reiterated that the utilities are "the responsible parties and owners" of the coal plants and, therefore, it is for them to decide "the moment at which they choose to close the central".<sup>13</sup>

Also, on 11 July the Minister of Energy Transition noted at the Congress of Deputies that the ministry's number one priority is to present, before the end of the year, a Bill on Climate Change and Energy Transition. In addition, she said that, as part of the Governance Regulation of the European Union, Spain – along with other EU member states – should prepare, also before the

<sup>9</sup> <https://europeanclimate.org/wp-content/uploads/2017/06/16-1213-rev2-DNV-GL-report-ECF-BREF-LCP2.pdf>

<sup>10</sup> El Mundo (2017), [Endesa renuncia al carbón español al conllevar una inversión "irrecuperable" de 800 millones](#).

<sup>11</sup> IEEFA (2017), [How European Utilities Can Capitalize on New Emission Limits to Drive Decarbonisation. The Case of Endesa](#).

<sup>12</sup> Edesa (2018), [Informe de Gestión Consolidado correspondiente al ejercicio anual 2017](#).

<sup>13</sup> El Diario.es (2018). Competencia da su visto bueno al cierre de la central de carbón de Anllares, propiedad de Naturgy y Endesa. 16 de julio de 2018. For more general information see [here](#).

end of this year, a draft National Energy and Climate Plan (NECP), establishing objectives, goals and trajectories for decarbonisation, including the “progressive closure of polluting sites”.<sup>14</sup> This suggests that some political barriers are being removed, increasing the pressure on utilities to submit closure requests for coal plants. Keeping coal plants open in Spain presents a liability and reputational risk for Enel and Endesa, contradicting its own strategy and affecting public health and the European decarbonisation roadmap.

There is a further, specific reputational risk relating to each plant. Given the reduction of political barriers, there is a clear opportunity to advance the proposal for the closure of the Compostilla and Teruel plants (announced in May 2017) by submitting the closure request. Both are on the Europe Beyond Coal “Toxic 30” list (for 2015 pollution data), which includes the 30 plants responsible for the highest number of premature deaths in Europe. Additionally, these plants are currently under the Transitional National Plan (TNP) in force until 30 June, 2020. The same goes for the closure of Groups I and II of Alcudia, considering that the preliminary Bill on Climate Change and Energy Transition of the Balearic Government presents roadmaps for decarbonisation in this region; and that these groups are within the exception of small networks isolated from the IED until 1 January, 2020. Also, in view of the need to phase out coal in Europe to meet the objectives of the Paris Agreement and the desire of the new Spanish Government to move towards a low carbon economy, Enel and Endesa should agree on a timeline for the progressive closure of As Pontes, Litoral and the Groups III and IV of Alcudia by 2025, at the latest. The risks and challenges imposed by climate change demand greater action and transparency by large players such as Enel and Endesa, and this implies the agreement of a clear timeline for an orderly and progressive closure of all their coal-fired plants.

In **Italy**, the State (through the Ministry of Economics and Finance) is the largest shareholder of Enel with 23.6% of company shares. The government’s National Energy Strategy (SEN) published in November 2017 affirms its political intention to phase out residual coal capacity by 2025.<sup>15</sup> This commitment may introduce a debate about coal capacity retained by Enel in other countries that have not introduced phase-out targets: if the Italian government has introduced a phase-out target within its national boundaries, why would it not pressure Enel, as its largest shareholder, to close coal capacity in other countries? Such a move would increase the liability risk for Enel/Endesa in Spain.

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<sup>14</sup> Congreso de los Diputados (2018). [Comparecencia de la Señora Ministra de Transición Ecológica \(Ribera Rodríguez\). Diario de Sesiones del Congreso de los Diputados. Comisión Transición Ecológica. Sesión Nro. 21 \(extraordinaria\), 11 de julio de 2018.](#)

<sup>15</sup> The SEN also mentions the possibility to introduce fiscal measures and/or carbon floor prices mechanisms as long as those are coordinated at EU level. The National Strategy opens up the possibility for compensations of stranded costs in coal capacity as long as those are compatible with EU regulation and directed to requalification of sites and employment targets. Electricity regulator may intervene in the stranded cost issue given the state participation in Enel.

## 4. Alignment of Enel and Endesa with the Paris Agreement

### What climate science means for coal power globally and in Europe

According to the latest climate science, limiting warming to 2°C by 2100 means that the net emissions of greenhouse gases need to be reduced by 40-70% by the time we reach 2050, and brought to zero by the end of the century.<sup>16</sup> Respecting the more stringent limit of 1.5°C will require reducing emissions of greenhouse gases even more rapidly in the coming years and decades, and bring them to zero around mid-century.<sup>17</sup>

This has two implications for coal power. First, research has shown that no new investments in fossil electricity infrastructure – notably coal – are feasible from 2017 at the latest.<sup>18</sup> Second, existing coal infrastructure needs to retire early: even with no new coal plant construction, emissions from coal power generation in 2030 would still be 150% higher than what is consistent with the well below 2°C target.<sup>19</sup>

The implications of the Paris Agreement for coal and renewable power are clear. Investors have recently acknowledged climate science research that supports the need to phase out coal by 2030 within member countries of the Organisation for Economic Co-operation and Development (OECD) and the European Union; by 2040, in China; and by 2050, in the rest of the world. More recent analysis by the International Energy Agency (IEA) ‘beyond 2°C scenario’ indicates that non-OECD countries should phase out production from coal power even earlier, by 2040. In the European Union, a quarter of the coal plants already in operation will need to be switched off before 2020, and a further 47% should go offline by 2025.<sup>20</sup>

The analysis above underscores how ambitious climate action is incompatible with continued coal-fired power generation in developed economies. That in turn illustrates the risk of investing in new coal plants or upgrading existing coal plants – which run a risk of becoming stranded assets. Investors, insurers and banks that wish to minimise financial risks and maximise returns must therefore drive the development by Enel/Endesa of a business strategy aligned with the Paris Agreement.

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<sup>16</sup> IPCC (2014), AR5

<sup>17</sup> Climate Action Tracker (Climate Analytics, Ecofys, NewClimate Institute, Potsdam Institute for Climate Impact Research)

<sup>18</sup> Pfeiffer, Millar, Hepburn, Beinhocker (2016), The ‘2°C capital stock’ for electricity generation: Committed cumulative carbon emissions from the electricity generation sector and the transition to a green economy, in Nature.

<sup>19</sup> ClimateAnalytics (2016), [Implication of the Paris Agreement for coal use in the power sector](#)

<sup>20</sup> ClimateAnalytics (2017), [A stress test for coal in Europe under the Paris Agreement: scientific goalposts for a coordinated phase-out and divestment](#).



## Carbon Disclosure Project analysis

The Carbon Disclosure Project (CDP) has developed a league table of 14 European utilities based on the risks identified by the FSB TCFD.<sup>21</sup> It notably assesses transition risk, introducing a model to measure locked-in emissions between 2015-2050 from current fossil fuel assets against companies' implied carbon budgets to achieve a 2°C transition.

The analysis shows that Enel ends up in 4<sup>th</sup> place, with a score of C for managing transition risk. Endesa scores significantly worse, at 12<sup>th</sup> overall and scoring D for managing transition risk. This underscores the analysis above that Endesa's coal fleet is more vulnerable to climate related risks, and hence that the Enel group should pay particular attention to find an appropriate phase-out plan for these assets.

## Greenpeace report

A Greenpeace Spain report, *One way: 2025 without coal and nuclear energy*, counters Endesa's arguments that coal capacity is necessary if nuclear plants are to be retired at the end of their current life; that nuclear plants would need to extend their lifespan in order to allow any early coal phase-out; and that any early coal or nuclear phase-out would have a high economic and emissions cost.<sup>22</sup>

The study was carried out by the Technological Research Institute (IIT) of the School of Engineering of the University of Comillas, Madrid, applying the sufficiently contrasted ROM model that allows for the representation of the hourly operation of the electrical system. The analysis shows that the simultaneous closure of coal and nuclear power capacity is less a technical or economic problem than a political issue. Even in the worst possible conditions, security of supply is guaranteed, and in all cases the high penetration of renewables and energy savings reduces costs.<sup>23</sup> Cost differences between the different scenarios are thus not sufficiently significant to delay an early coal phase-out decision.

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<sup>21</sup> CDP (2017), [Charged or static - Which European electric utilities are prepared for a low carbon transition? The utilities assessed are: Verbun, Fortum, Iberdrola, Enel, SSE, Centrica, EDF, EDP, E.ON, Engie, ENBW, Endesa, CEZ and RWE.](#)

<sup>22</sup> Greenpeace (2018), [Unico sentido 2025 sin carbon ni energia nuclear.](#)

<sup>23</sup> In the analysis, electricity demand, conventional generation and investment in renewable energy scenarios were built for 2025 and 2030, respecting at least the compliance with European directives. It has been carried out with safety parameters and, therefore, taking into account the most unfavorable cases of hydroelectric or wind production.

## 5. Investor, insurer and bank action

There is a growing consensus among leading financial institutions globally that as the world moves towards a low carbon economy, coal power assets are going to be stranded, and will hence constitute a growing financial and reputational risk. Many investors, insurers and banks have adopted coal policies that have started to affect Enel and Endesa's access to financing. An overview of these impacts is presented below, and highlights the additional action that investors, insurers and banks need to undertake to bring the two companies' business models fully in line with the Paris Agreement.

### Tool: the Global Coal Exit List (GCEL)

The 'Global Coal Exit List' (GCEL) is the world's largest coal company database, providing key statistics on 775 companies and their subsidiaries. The database was developed by urgewald, is open-source, free and can be consulted on <https://coalexit.org/>.

The GCEL includes three categories of coal companies: mining, utility and service companies (i.e. companies that provide services throughout the coal value chain such as dedicated trade, infrastructure, port terminals, finance, etc.). It provides data, key statistics and identifiers (ISIN codes, if available) for each company.

The GCEL includes utilities that qualify for one or more of the 3 following criteria:

- They are planning coal power expansion;
- They have a coal share of revenue/power generation above 30%;
- They operate more than 10 gigawatt of coal capacity.

The Enel group is included in the GCEL because it has 17.5 GW of coal capacity (i.e. more than 10 GW). Endesa is also covered by GCEL criteria because its coal share of power generation is above 30%. Both Enel and Endesa can thus be considered to merit closer scrutiny by investors, insurers and banks.

### Impact of investor policies on Enel and Endesa

A significant number of mainstream European investors have adopted public coal divestment policies. The majority of these policies identify thresholds for revenues or power production from coal.

- The **Enel group's** power production of coal (27%) is below the most commonly used thresholds of 30% and 50%, and so the company is likely not to be seriously affected. Some investors however have lower thresholds that could affect the Enel group (e.g. 20% revenue threshold for CNP Assurance and Caisse des Dépôts).
- **Endesa** – as a separately listed company with outstanding debt – is more exposed to investor policies: its share of coal power production (31.7%) is above the 30% threshold

adopted by many investors, such as the Norwegian Sovereign Wealth Fund, Allianz, AXA, Generali, Hannover Re, Lloyd's, Munich Re, SCOR, Swiss Re, and Norwegian asset manager and asset owner Storebrand. Hence, some investors are expected to have divested from Endesa.

- Allianz also committed to fully phase out coal-based business models across its investment portfolios by 2040. To reach this target, Allianz will tighten its exclusion threshold over time, so even power utilities with smaller coal involvement and those with plans to expand the life of their coal assets must expect to come under increased scrutiny. This could include Enel and Endesa.

Coal policies of investors are getting more stringent over time, so it can be expected that they will affect Enel and Endesa even more seriously going forward. Investors are also adding pressure through public engagement – as opposed to only engaging in dialogues behind closed doors. Enel is listed as one of the target companies of the **Climate Action 100+ Coalition** that asks companies (amongst others) to ‘take action to reduce greenhouse gas emissions across their value chain, consistent with the Paris Agreement’s goal of limiting global average temperature increase to well below 2-degrees Celsius above pre-industrial levels’.<sup>24</sup>

## Impact of bank policies on Enel and Endesa

15 European banks have ended direct finance to new coal plants, which to date has been the main focus of banks’ coal policies.<sup>25</sup> Policies that restrict corporate loans and shares, and underwriting bonds are less developed, but 11 banks have adopted such policies. For example ING has committed to ‘by 2025 no longer finance new and existing clients in the utilities sector that are over 5% reliant on coal’. This implies that the bank will stop financing the Enel group if it still has too many coal plants by 2025.<sup>26</sup>

## Impact of insurer policies on Enel and Endesa

Within a very short period of time, all leading European coal underwriters, except for Hannover Re, Mapfre and the Lloyd’s insurance market, have adopted public criteria restricting their insurance coverage to the coal sector.

- **Allianz, AXA and Swiss Re** have ended underwriting support to single-site existing coal projects, and SCOR ruled out similar coverage to existing lignite plants and mines.
- **AXA** does not provide cover to insurance packages in which more than 50% of premiums are linked to coal.
- Swiss Re and Zurich committed to not provide cover to companies generating more than 30% or 50% of their power production from coal. This includes Endesa.
- **Generali** will not provide coverage to new clients that generate more than 30% of their revenues or power production from coal, produce more than 20 million tonnes of coal a year, or are planning new coal plants. Generali is also engaging with existing clients, “monitoring their plans to reduce environmental impacts, their strategy to shift to low-carbon activities and the measures envisaged for protecting the community and citizens”<sup>27</sup>. Depending on the outcomes of the engagement dialogues in Q1 2019, Generali

<sup>24</sup> <http://www.climateaction100.org/>

<sup>25</sup> Banktrack provides an overview of commercial banks’ coal policies on their [website](#).

<sup>26</sup> ING (2017), [Updated Environmental and Social Risk Framework](#).

<sup>27</sup> Generali’s coal policy can be accessed from this page : <https://www.generali.com/our-responsibilities/our-commitment-to-the-environment-and-climate>



will decide to either end property coverage for coal-related activities of these companies or renew them.

- **Allianz** committed to fully phase out coal-based business models across its Property and Casualty portfolios by 2040. This implies that the insurer will have to reduce its exposure to coal companies over time and that clients will have to demonstrate their capacity to fully phase out their coal assets by 2040 or will lose Allianz's underwriting support.

## 6. Recommendations

Investors, insurers and banks should require Enel and Endesa to:

- Commit to align their business models with the Paris Agreement and, more concretely, to adopt a time-bound climate science-based target built on forward-looking climate-scenario analysis. Enel has committed to adopt such a science-based target.
- Put an immediate end to capital expenditure for new coal plants, the purchase or any retrofitting of existing coal plants that lead to life-extensions – in particular for its coal plants in Spain.
- Publish a clearly articulated and detailed roadmap for the gradual closure (not sale) of existing coal plants, ending at the latest in 2025. This timeline takes into account that the Enel group has 6.9GW of coal in Italy, which has adopted a coal-phase out deadline of 2025 – and apply the same deadline for Endesa’s assets in Spain, which operates an old coal fleet. Enel and Endesa can also draw on granular analysis provided by CDP and Greenpeace.

Investors, insurers and banks should also adopt ‘no coal policies’ along the lines of the ‘principles and approaches for impactful public coal policies’ that were developed by the Europe Beyond Coal campaign (see box below).

### Europe Beyond Coal’s principles and approaches for impactful and meaningful public coal policies for financial actors

In order to meet the UN Paris Climate Agreement goals of limiting “global average temperature to well below 2 °C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5 °C”, no new coal power capacity may be built and coal power will need to be phased out in the coming years. Investors have recently acknowledged climate science research that support the need to phase out coal by 2030 in the European Union and in Organisation for Economic Co-operation and Development (OECD) countries; by 2040, in China; and by 2050, in the rest of the world. More recent analysis by the IEA ‘beyond 2°C scenario’ indicates that non-OECD countries should phase out production from coal power even earlier, by 2040.

**A. Overall commitment:** to mitigate climate and financial risks associated with the coal sector, finance actors\* should adopt a public “no coal policy”, which supports the alignment of their business models with climate science-based targets that are consistent with the goals of the UN Paris Climate Agreement. This implies that finance actors should commit to over time (2030 in OECD/Europe, 2040 globally) eliminate coal assets from all business lines, and that all coal companies in which they are involved should either be actively engaged with or divested from.

**B. Exclusion criteria for coal projects:** as a consequence, finance actors should not provide or renew direct support to coal plants/mines/infrastructures worldwide - including project finance and other dedicated finance support, advisory mandates, insurance underwriting, investment.

**C. Assessment criteria for exclusion of coal companies:** the criteria below capture companies that are currently either expanding or are highly exposed to coal, in relative as well as absolute terms:

- Companies with coal expansion plans, including the construction/development/expansion of coal plant/mine/infrastructure, and life extension of existing coal plants through retrofit, acquisition of existing coal assets;
- Companies producing more than 20 Mt of coal per year, or with over 10 GW of coal power capacity;
- Companies that generate more than 30% of revenues from coal mining or produce more than 30% of power from coal.

By applying these criteria to their financial universe, finance actors can identify which companies are currently unlikely to be able or be unwilling to transition rapidly enough to a 100% renewables-based energy system, and reconsider financial support\*\* accordingly. These criteria should become stricter over time, as the deadline for a complete coal phase-out is approaching.

**D. Criteria for engagement with coal companies:** additional criteria need to apply to companies that own coal assets, but are considered to still have an opportunity to transition rapidly enough to a 100% renewables-based energy system. By applying targeted and impactful engagement\*\*\* finance actors should ask those respective companies to:

- Adopt, within one year maximum, a decarbonisation target to gradually align their business model with the UN Paris Climate Agreement.
- Publish, within two years maximum, a clearly articulated and detailed implementation plan for the gradual closure (not sale) of existing coal plants and mines, exiting coal at the latest in 2030 in the OECD and in Europe, and in 2040 in the rest of the world.

By applying these four recommendations, a finance actor will achieve zero coal exposure within the respective decarbonisation timeframes.

\*Finance actors include banks, insurers and investors.

\*\*Financial services include lending, underwriting, advisory, insurance coverage and investment with regards to own accounts as well as third parties.

\*\*\*Financial institutions must gradually reduce/remove financial support within set timeframes (6, 12, 18, 24 months) if the engagement process does not lead to significant results.

This paper was issued **by the Europe Beyond Coal campaign in December 2018.**

*Europe Beyond Coal is an alliance of civil society groups working to catalyse the closures of coal mines and power plants, to prevent the building of any new coal projects and hasten the just transition to clean, renewable energy and energy efficiency. Our groups are devoting their time, energy and resources to this independent campaign to make Europe coal free by 2030 or sooner. [beyond-coal.eu](http://beyond-coal.eu)*

These organisations have contributed to the development of the paper:

- Banktrack
- Greenpeace Italy
- Greenpeace Spain
- RE:Common
- Sandbag
- The Sunrise Project
- WWF Italy
- WWF Spain
- WWF European Policy Office

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