Country brief

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Cutting Europe's lifelines to coal

Tracking subsidies in 10 countries

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Spain

Key findings

Transparency – subsidy reporting

Rating: good

- The government provides an overview of the types of subsidies provided to the restructuring of the coal mining regions on the website of the Ministry of Energy, Tourism and Digital Agenda, including links to the relevant legislation. A similar overview of subsidies to coal power, including those provided under the capacity mechanisms, was not found.

Coal mining – subsidy phase out

Rating: good

- A Framework plan for coal mines and coal mining communities has been adopted to facilitate a gradual phasing out of operational aid by the end of 2018, with social, economic and environmental transition support to mining communities and regions provided until the end of 2021.

Coal fired power – subsidy phase out

Rating: poor

- Spain provides subsidies to support coal-fired power plants through capacity payments and environmental upgrades, including sulfur scrubbing.

1. Trends in the production and use of coal in Spain

While Spain's domestic coal production has been in decline over the past decade, coal-fired power still accounts for a significant share of the country's electricity production. Spain has extensive renewable energy resources, which should facilitate its phasing out of coal-fired power.

Spain's domestic coal production declined significantly between 1990 and 2014, with the number of workers employed by the mining sector falling from 45,200 to 3,126 people. The country now relies on imports for most its coal use (International Energy Agency (IEA), 2015).

The share of coal in power production has also shrunk from 24.8% in 2007 to 14.5% in 2016. However, the waning of coal-fired power production has not been steady. After a sharp decline, the share of coal-fired power generation increased again in 2011 and 2012 because of the implementation of a preferential dispatch mechanism. In 2013, the share of coal power dropped again, only to increase again in 2014 and 2015. In 2016, coal was still the third largest source of electricity in Spain, after nuclear (22%) and wind (18%) power. Another main source of electricity in Spain is hydropower, which accounted for 14% of electricity generation in 2016. While gas was one of the major sources of electricity between 2006 and 2010, its share in electricity production has decreased since 2011 and it accounted for just 11% of electricity production in 2016 (Red Eléctrica Española, 2017).

The reform of a renewable energy subsidy programme to cap renewable energy producers' rates of return, combined with low coal and natural gas prices, led to a drop in renewable energy generation in 2015. In 2016, the share of renewables in electricity generation slightly increased again to 39% (Red Eléctrica Española, 2017). Overall, Spain currently has an excess of electricity generation capacity, and accordingly it would be beneficial to retire surplus, uneconomic coal and gas capacity (Wynn, 2016). Instead of selling excess renewable electricity abroad this electricity could be used domestically to support the domestic phasing out of coal-fired power (EurActiv, 2016).

To meet its emission reduction objectives, Spain will need to shut down its remaining coal power capacity (about 10GW) (Global Plant Tracker, 2016). Although some plants were retired in 2015 and 2016, Spain does not yet have a comprehensive retirement plan for its remaining coal capacity – unlike other European Union (EU) Member states, including the United Kingdom, Finland and Denmark (Littlecott, 2016).

In 2015, coal-fired power accounted for a further 15% of total greenhouse gas emissions in Spain (Sandbag, 2016). In addition, it is known that coal emissions create significant health costs. For example, the health costs of coal-fired power are estimated to have ranged between €2.3 and €4.3 billion and to have caused over 1,500 premature deaths in 2013 (Schaible et al., 2016).

2. Status of subsidies to coal and coal-fired power in Spain

As a Member State of the EU and thus part of the G20, Spain has repeated its commitment to phase out fossil fuel subsidies every year since 2009. In 2016, as a continuing EU member and therefore part of the G7, the country called on all nations to end fossil fuel subsidies by 2025. The European Commission has furthermore repeatedly called on EU Member States to end environmentally harmful subsidies, including those to fossil fuels, by 2020.

Regardless of these commitments – and aside from some efforts to gradually phase out some coal mining subsidy measures – Spain's remaining coal subsidies are high and the country's former parliament have proposed to introduce new subsidies that support coal mining and coal-fired power.

Under Spain's National Coal Plan (2006-2012), the government have subsidised the operational costs of domestic coal mining producers, including HUNOSA (a major state owned producer of hard coal), and provided guarantees for coal providers through volume quotas and obligations to supply the domestic market (IEA, 2015; Organisation for Economic Co-operation and Development (OECD), 2015). Although this aid was initially expected to be phased out by the end of 2010, pressure from certain EU Member States led to a decision to allow State aid for uncompetitive hard coal mines to continue until the end of 2018 (EU Council Decision 2010/787/EU; European Commission, 2010). In 2013, the Spanish government reached an agreement with the domestic coal industry regarding the reduction of subsidies to the coal mining sector until the end of 2018 – called the 'Framework Plan for Coal Mines and Mining Communities 2013-2018'. This plan only received approval by the European Commission in 2016, following modifications, as the trajectories for the production and use of coal and employment included in the framework did not initially show a downward trend as required. The extent that these trajectories have been adjusted remains unknown to the public, as this information is kept confidential.

The Framework Plan for Coal Mines and Mining Communities 2013-2018 will reduce the subsidy price for underground coal mines from €30 per tonne in 2013 to €5 per tonne in 2018. For open pit mines this figure went from €1 per tonne in 2013 to €0.50 per tonne in 2014, with an aim for support to be phased out completely by 2019 (World Coal, 2013). The original aim was to reduce the output of coal mining from 6.6 to 5.9 million tonnes in between 2013 and 2018 through the subsidy phase-out, which would have resulted in around 1,000 coal miners losing their jobs (European Commission, 2016a, 2016b). However, as this did not show the downward trajectory in coal production required by the European Commission, amendments were made to the Framework Plan that have not yet been made publicly available (Ruiz-Bautista, IIDMA, 2017). The total allocated budget to support

Spain's transition to a subsidy-free coal mining sector amounts to €2.1 billion between 2011 and 2021(European Commission, 2016a, 2016b). The Closure Plan specifies that annual support for closure aid will decrease from €291 million to €50 million per year and 'exceptional' aid will decline from €316 million to €75 million between 2011 and 2018 (Ruiz-Bautista, IIDMA, 2017). Financial measures under the plan include the following (Decision 2010/787/EU):

- Closure aid: for uncompetitive coal mines (2013-2018)
- Exceptional aid: social aid for labour costs to cover lost working days and for advanced age workers, as well as environmental aid for the rehabilitation of mining land (2013-2021)
- Economic stimulation aid: financing of infrastructure and job creation projects for alternative economic development of mining regions (2013-2021)

It is unclear which existing coal mining subsidies will be officially included under the Framework Plan budget. (To avoid the risk of double counting, the plan's total annual estimate is not included in the table in section 4. Particularly given there are existing measures to support mine closures and associated social support. Instead, the only the new measures on environmental aid and economic stimulation are included.)

Although the Spanish Government has also made some progress in the elimination of subsidies to support the transport of coal and to coal-fired power, remaining policies that support the latter include the interrelated capacity mechanisms and preferential dispatch mechanism. Spain's capacity market mechanisms, first introduced in 1997, have supported coal-fired power capacity through payments to support plants to stay open regardless of the capacity generated (Wynn, 2016). Analysis by the Institute for Energy Economics and Financial Analysis (IEEFA) suggests that Spain's capacity mechanism fails to meet the European Commission's criteria for determining whether the scheme is necessary and is not used to support favoured industries (Wynn, 2016). In addition, the Royal Decree 134/2010 has regulated the preferential dispatch mechanism for 10 coal plants that were obligated to buy and burn set quantities of indigenous coal between 2011 and 2014 (IIDMA, 2016). In 2015, the Ministry of Industry, Energy and Tourism drafted a subsidy scheme that was designed to be a continuation of the preferential dispatch mechanism and supposed to facilitate a 67% increase in coal production by encouraging coal plants to burn domestically produced coal in return for compensation for investments in NOx emission reduction equipment. The European Commission has yet to receive notification of this measure (Ruiz-Bautista, IIDMA, 2017).

Next to these existing subsidy measures, two parties submitted proposals for new coal subsidies related to tax breaks – equivalent to a €0.15 per gigajoule hydrocarbon tax rebate – in the previous Spanish parliament. These proposals do not have to be considered by the new government unless they are resubmitted. If this happens and they are subsequently implemented, this subsidy would reduce incentives to shift away from the production and use of coal and other fossil fuels and would therefore be inconsistent with Spain's commitments to end fossil fuel subsidies (Foro, 2016).

3. Spain's coal subsidy measures explained

Annual average coal subsidies (see table): €754 million.

The breakdown below provides a chronological overview of Spain's historic, continuing and new subsidies. The historic subsidies are not included in the annual average estimate of coal subsidies as these have been phased out.

- **Aid to companies purchasing indigenous coal (historic: 1986 to 1993):** The 'Nuevo Sistema de Contratación de Carbones Térmicos' was introduced as a way of granting companies state aid in exchange for buying certain quantities of indigenous coal. This was in line with the European Commission Decision 3632/93/CECA that included provisions for the treatment of the coal industry by Member States (FITAG-UGT and CCOO, undated). No estimates are available for this measure.
- **Subsidy for the Interbasin Transport of Coal (historic: 1998 to 2011):** This subsidy provided electricity companies with budgetary transfers for the transport of coal across Spanish basins. The amount of support depended on the year, calorific value of coal and specific location of the coal basin. The support was limited to a maximum amount of coal (e.g. 76,887 tonnes for the Pyrenees basin and 443,800 tonnes for the Puertollano basin). It is estimated that the total value of the subsidy came to €56 million between 2005 and 2010 (OECD, 2015). This support measure is not included in the annual estimate, as it was phased out in 2011.
- **Funding for coal stockpiles (historic: 1998 to 2013):** Funding was provided to power plants to support the use of domestically mined coal stockpiles, which it was thought could guarantee a total of over 720 hours of power generation. The government announced in 2013 that the subsidies for coal-fired power plants would not be renewed at the end of 2014. It is estimated that the total value of the subsidies that were provided under this programme stood at approximately €35 million between 2005 and 2010 (OECD, 2015). This support measure is not included in the annual estimate, as it was phased out in 2013.
- **Preferential dispatch mechanism (historic: 2010 to 2014):** This mechanism provides preferential dispatch into the electricity grid for 10 coal plants using domestically produced coal. This measure agreed levels of electricity

provided into the electricity grid and provided coal-fired energy production preference over alternative sources of energy production (Comisión Nacional de los Mercados y la Competencia (CNMC), 2015). Total support between 2010 and 2014 amounted to €1.3 billion (Ruiz-Bautista, IIDMA, 2017).

- **Capacity mechanism (continuing: 1997 onward):** This support measure provides payments to electricity generation facilities, including 11GW of coal-fired power capacity, for staying open regardless of the capacity generated. The total estimate for coal, gas, oil and hydropower is estimated at €1.3 billion per year and regulators estimate that most of the coal-fired electricity industry is dependent on these capacity payments and other subsidies (Wynn, 2016). The support for coal is estimated at €497 million during 2010 to 2015 (CNMC, 2016). In accordance with the IEEFA, the Spanish capacity mechanism most likely fails the European Commission's criteria for judging whether these support measures are necessary and not being used to prop up favoured industries in practice (Wynn, 2016).
- **Adjustment Aid to Coal Producers (continuing: 1998 onward):** The Spanish Government continues to provide transfers to private coal producers, which are used to cover their social costs and the contractual obligations that arise from the restructuring of the coal-mining sector. The total aid allocated between 2004-2014 is estimated at over €203 million (OECD, 2015).
- **Operating Aid to HUNOSA (continuing: 1998 to 2018):):** This aid helps cover HUNOSA's operating costs and is provided by the Institute for the Restructuring of Coal Mining and the Alternative Development of Mining Areas. However, it is meant to be phased out by 2018 (OECD, 2015). Operating aid has now been transformed into closure aid under the Framework Plan (Article 3, Decision 2010/787/EU).
- **Operating Aid to Coal Producers (continuing: 1999 to 2018):** The Spanish Government also provides price support to domestic coal producers beyond HUNOSA. Under this measure, transfer payments are made to private coal companies. These are negotiated and reflect the difference between their operating costs and their prices for selling their output to local power plants. It is estimated that the cost of this measure stood at nearly €2 billion between 2005 and 2014. However, this is set to be phased out by 2018 (OECD, 2015). Operating aid has now been transformed into closure aid under the Framework Plan (Article 3, Decision 2010/787/EU).
- **Inherited liabilities due to coal mining (continuing: 2002 onward):** This measure provides budgetary transfers to non-profit organisations, coal miners and their families. This is used to alleviate the social and technical costs that stem from Spain's declining coal-mining sector, with an estimate that this subsidy reached a total cost of almost €3 billion between 2005 and 2014 (OECD, 2015).
- **Subsidies for environmental upgrades of coal-fired power plants (continuing: 2007 onward):** For 10 years from the date of either commissioning authorisation or entry into force, 6GW of coal plant capacity received €8.750/MW/yr to support the financing of sulphur scrubbing units and other environmental upgrades. A Royal Decree-law in 2012 reduced this investment incentive and set a minimum reduction to environmental incentives at €7.875/MW/y. It is unknown which coal power plants are receiving these payments. Although this support is conditional on investments in sulphur dioxide emission reductions, most coal power plants in Spain have authorised emission limit values for sulphur dioxide well above those required by EU regulation as per the Directive 2001/80/EC on limiting emissions of certain pollutants into the air from large combustion plants (Wynn, 2016; Ruiz-Bautista, 2017).
- **Aid for the economic stimulation of mining regions (continuing: 2013 to 2021):** aid to finance job creation and infrastructure projects for the economic stimulation of mining regions. The projects are financed under the Framework Plan for Coal and Coal Mining Communities. There has been an allocation of €150 million to job creation projects and €250 million for infrastructure projects during this period. This results in a total annual average of €44 million per annum for economic recovery projects (IRMC, 2013; 2017; Ruiz-Bautista, 2017).
- **Environmental aid for mine closures (continuing: 2014 to 2021):** environmental aid to finance the closure of mines and the restoration of habitats affected by mining activity – Decision 2010/787/EU – which is included as 'exceptional costs' included under the Framework Plan for Coal and Coal Mining Communities. This support is estimated at €15 million per annum between 2014 and 2021 (IRMC, 2013, 2017). However, it is estimated that the total aid provided in 2016 reached €25 million (Ruiz, Bautista, 2017).
- **Research and development budget for coal (continuing):** According to IEA data, the Spanish government spends an average of €0.5 million a year on coal-related research, development and demonstration (IEA, 2016).

4. Opportunities to phase out coal subsidies in Spain

Historically, Spain has provided significant subsidies to coal mining and coal-fired power. Despite its various commitments to ending fossil fuel subsidies – including coal – and despite overcapacity in its electricity market, Spain continues to provide such subsidies. While a few of these measures are supposed to support the closure of coal mines and can therefore be beneficial for the energy transition, other continuing coal subsidies incentivise the continuation of uneconomic coal-fired power generation.

The plan to gradually reduce coal mining subsidies by 2019, in line with the EU Council Decision 2010/787/EU, through the Framework Plan for Coal Mines and Mining Communities 2013-2018, denotes a step in the right direction.

Spain should now also adopt clear timelines for ending support measures to coal-fired power that serve to extend the lifetime of coal assets, including the capacity mechanism and aid to support environmental upgrades. The country should furthermore refrain from introducing proposed new support measures that are likely to prolong the lifetime of coal plants. Supporting a transition away from coal would help Spain optimise its use of its abundant domestic renewable energy resources that bring health, economic and environmental benefits.

Table 1. Existing and new measures that support coal:

Measure	Subsidy type	Stage	Fuel	Annual average (€ millions)	Year(s) for which estimate calculated	Source
Capacity mechanism	Budgetary support	Capacity mechanism	Coal	83.0	2010-2015*	CNMC (2016)
Adjustment Aid to Coal Producers	Budgetary support	Transition support	Anthracite, other bituminous coal and sub-bituminous coal	20.3	2005-2014	OECD (2015)
Operating Aid to HUNOSA	Budgetary support	Coal mining	Hard coal	66.4	2005-2014	OECD (2015)
Operating Aid to Coal Producers	Budgetary support	Coal mining	Anthracite, other bituminous coal and sub-bituminous coal	216.7	2005-2014	OECD (2015)
Inherited liabilities due to coal mining	Budgetary support	Transition support	Anthracite, other bituminous coal and sub-bituminous coal	308.1	2005-2014	OECD (2015)
Subsidies for environmental upgrades of coal-fired power plants	Budgetary support	Coal-fired power (other)	Coal	Not available	Not applicable	Wynn (2016) and Ruiz-Bautista (2017)
Economic stimulation aid (Framework Plan)	Budgetary support	Transition support	Coal	44.4	2013-2021**	IRMC (2013) and IRMC (2017)
Environmental aid for mine closures (Framework Plan)	Budgetary support	Decommission and rehabilitation	Coal	15.0	2014-2021	IRMC (2013) and IRMC (2017)
RD&D Budget for coal	Budgetary support	Research and Development	Coal	0.5	2007-2013	IEA (2016)

**Estimate calculated based on total support to coal power of €497 million during 2010-2015*

***Estimate calculated based on a total allocation of €150 million and €250 million respectively, earmarked for job creation and infrastructure projects during 2013-2021*

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This country study is a background paper for the policy briefing *Cutting Europe's lifelines to coal: tracking subsidies in 10 countries.*

For the purpose of this country study, subsidies to coal include: direct spending, tax expenditure and other support mechanisms (e.g. capacity mechanisms). Where information is available, estimates for all of these categories are included in the national subsidy total for each country and in the Country Studies. The policy brief provides a more detailed discussion of the methodology used for the country studies. The authors welcome feedback on both this country study and the policy brief to improve the accuracy and transparency of information on coal subsidies.

A data spreadsheet summarising coal subsidies data for the 10 European countries reviewed is available here: odi.org/coal-subsidies-Europe.

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