SCOPE Ratings

European Utilities Rating Methodology

Corporates

17 June 2025

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1. Introduction

This update of the European Utilities Rating Methodology details Scope Ratings' approach to rating utilities companies and complements the **General Corporate Rating Methodology**, superseding it in event of conflict, inconsistency or ambiguity.

Key changes to the methodology

Besides editorial changes, with this update we

- Providing typical information and data sources used in the analytical process;
- Enhancing the description of volatility when assessing operating profitability.

The updated methodology does not have an impact on outstanding ratings.

2. Scope of application

We define utilities as companies that collect the majority of their total revenues and cash flows through the generation, storage, transmission and/or distribution of electricity, heat and/or gas from facilities it owns and/or operates. Our sector methodology covers regulated and non-regulated energy utilities, applying a combined approach, however, addressing individual segment-specific characteristics. This also relates to utilities which operate regulated and/or non-regulated renewable energy generation capacities, such as independent power producers.

Some utilities are partially exposed to other infrastructure segments, such as waste and water, local or regional public transport, public pools and telecommunication services. 'Pure plays' in these subsectors are not covered by our methodology, nor are pure energy traders/retailers.

The methodology does not cover infrastructure asset or fund managers that focus purely on managing energy infrastructure assets through special purpose vehicles (SPVs) or funds. Pure project developers or EPC contractors respectively in the area of energy infrastructure are also not covered by this methodology as they would rather fall into business services and construction respectively.

The methodology describes how we assess the ratings based on the analysis of standalone credit factors. Many utilities are government-related entities which require a bottom-up rating approach as outlined in Scope's **Government Related Entities Rating Methodology**. As such, the final issuer ratings of such government-related entities are the result of the application of all relevant rating methodologies.

The methodology primarily focusses on European utilities but can also be applied selectively to non-European issuers where appropriate.

3. The European utilities industry

Business models in the European utilities industry vary greatly, in terms of size, operational exposure to regulated and non-regulated utility segments, horizontal diversification and vertical integration. The European utilities industry is highly fragmented and ranges from large pan-European incumbents displaying a high degree of vertical integration and covering multiple utility infrastructure segments, such as exploration, power generation, storage, transmission, distribution, to small, regional or local utilities or independent power producers, which show limited integration and control few infrastructure assets. The degree of fragmentation depends strongly on a country's level of decentralisation: more centralised energy markets including France, Norway, Finland, Italy and Spain are dominated by few power generators and distributors; more decentralised markets such as Germany, Austria and Switzerland show a high degree of fragmentation with many regional or local utilities controlled by municipalities (i.e. German 'Stadtwerke') or regional sub-sovereign authorities.

Given its public importance, certain utility segments are strictly regulated at sovereign or sub-sovereign level. Such regulations apply to either tariff regulation (e.g. in energy transmission, distribution, renewable energy generation) or to operations and safety requirements. While tariff regulation provides particular visibility and transparency in cash flows, utilities may face risks of intervention, as well as unforeseen regulatory changes.

Utilities typically offer essential products and services that cannot be substituted easily. However, the exposure to general economic cycles depends heavily on the business model and degree of integration. The resilience of different utility segments to the overall economic cycle varies greatly. Activities, such as energy transmission and distribution, show strong defensive and non-cyclical qualities due to their monopolistic structures and inelastic demand patterns in residential segments. By contrast, activities, such as commodity exploration and conventional power generation, may be highly exposed to severe cyclical risks. This is amplified by price risks, depending on regulations and the position of power generation plants in the merit order system. Moreover, these infrastructure segments also

suffer greater construction and operational risk, such as costs that may either not be recovered through price rates, or recovered but with material delays. Downstream activities such as energy supply may also display cyclical features, particularly when strongly exposed to industrial customers, in light of the industry inherent volatility of commodity prices and potentially significant churn rates.

The utilities industry is further characterised as highly capital intensive. Construction, acquisition and maintenance of utilities' infrastructure – power plants, gas networks or electricity grids – demands significant investment. Despite raising high entry barriers and reducing competition, the high level of capital investment is coupled with higher leverage and longer amortisation profiles than for average industrial companies. However, the relatively high leverage is frequently backed by comparatively stable asset values.

Utilities' operating cash flows (OCF) and free operating cash flows (FOCF) and their volatility differ widely in the industry, depending on the business model and position in the industry's value chain. Utilities in the transmission and distribution benefit from monopolistic structures and enjoy comparatively stable profitability and predictable cash flows, thanks to regulated tariffs, as well as high virtual exposure to residential customers and controllable cost structures. In contrast, utilities whose cash flows are highly exposed to non-regulated upstream activities are subject to more volatile and less-predictable cash flows, particularly if they are derived from power generation assets at the end of the merit order system. Moreover, different capital needs regarding volume and timing strongly impact FOCF generation. While expansion and maintenance capex of grid and network operators can be spread over a wider time horizon and FOCFs tend to show smoother patterns, FOCFs of power generators usually show stronger capex concentration in some years and thus higher volatility.

Given the public importance of infrastructure services, many utilities receive government support with sovereigns or sub-sovereigns as the main shareholder. Such government support is normally provided through capital support, tariff setting by regulatory authorities or laws, or most importantly the possibility of a bail-out through the provision of guarantor liability. This form of government support may materially reduce default risk compared to other industries and therefore makes a significant difference between a stand-alone credit rating and a final issuer rating for utilities. This is addressed through a potential uplift on the standalone credit assessment when we apply the bottom-up approach of its rating methodology for government-related entities.

Parameters which qualify a utility for an investment grade rating are: strong cash flow protection with low substitution risk through stable regulation and strong market position across different service territories; a well-diversified asset and customer base anchored strongly in non-cyclical business segments; solid profitability patterns with low volatility; highly predictable cash flows; and sound financial metrics. Strong government support from a financially strong sovereign or sub-sovereign reduces the likelihood of a utility's corporate default and can improve a utility's credit rating to the higher investment grade categories.

In contrast, high merchant and substitution risks due to challenging or unstable regulations or government interference, a comparatively small and less diversified asset portfolio that is vulnerable to event risks, and a strong cyclical exposure in power generation, exploration or supply can be indicators for a sub-investment grade rating. Other indicators of a utility's credit quality in the sub-investment grade bracket are high exposure to loss-making infrastructure segments, such as public baths or public transport that require continuous financial support or cross-subsidising from other activities. Such business risks may be coupled with less predictable and volatile cash flows in conjunction with weaker financial measures that also indicate a sub-investment grade rating.

Ratings of utilities can reach up to higher investment grade categories, driven mostly by the degree of business protection, which may stem from a supportive and stable regulatory environment or a monopolistic market position, a very well-diversified geographic footprint or a strong link to potential government support in case of a bail-out.

4. Information/Data sources

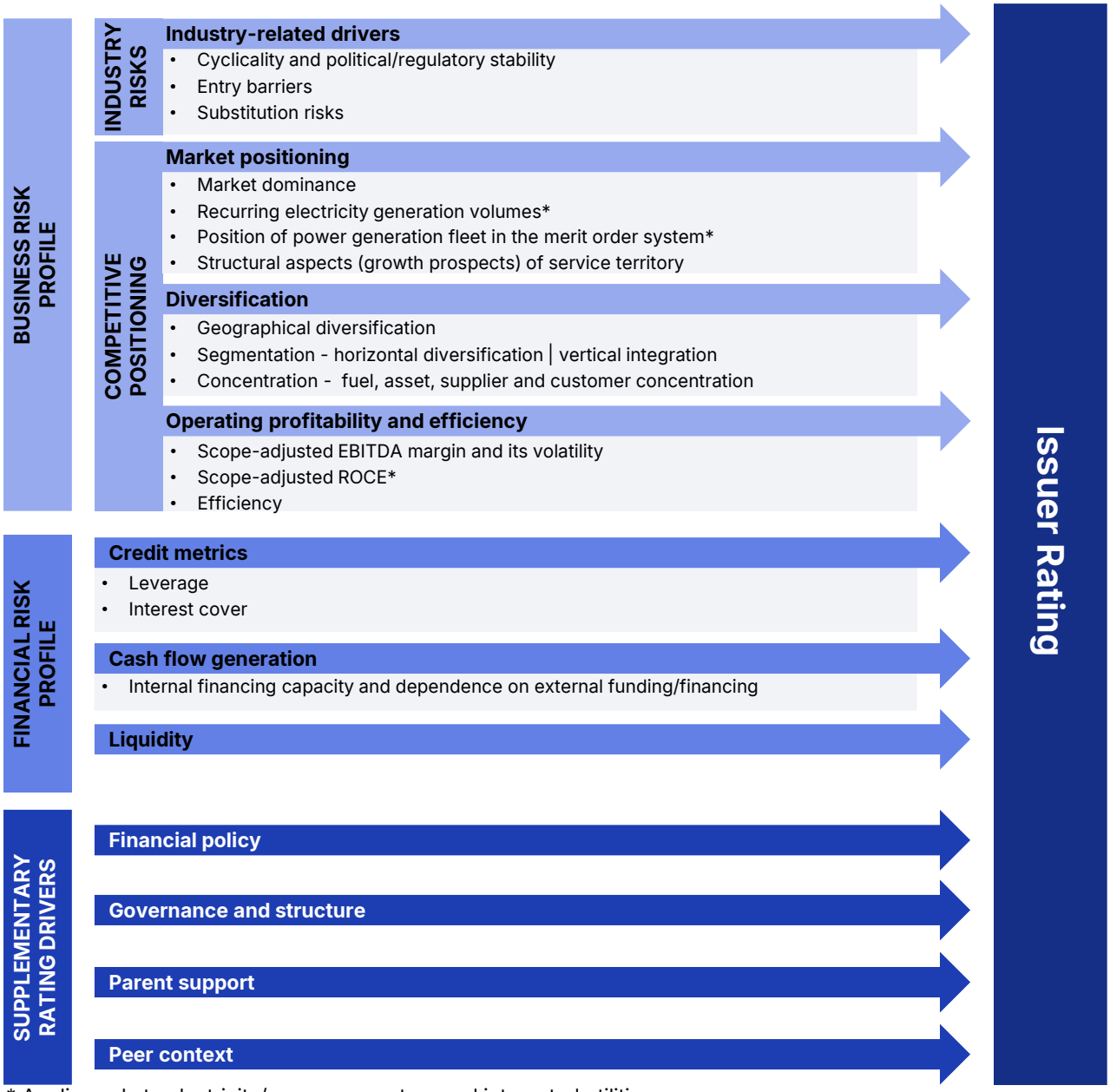
In the analytical process Scope typically takes into account the following sources of information. Not all of the listed information will be considered for every rated entity. Moreover, Scope may consider additional sources of information if necessary.

- Audited financial statements
- Unaudited interim financials
- Press releases
- Presentations and information from conference calls/Capital Market Days
- Financial forecasts/budgeting of the rated entity, if available/accessible
- Research on the industry, rated entity and relevant jurisdictions
- Data from external data providers, e.g. consensus estimates, debt placements
- Management meeting (in case of issuer participation)
- Loan documentation, e.g. debt prospectuses, bank loan agreements
- Valuation reports from external assessors
- Scope internal data, e.g. spreading of historical financials and detailed forecasts for the next few years, peer group data

5. Key components

We apply our rating methodology for European utilities as outlined in Figure 1. The rating analysis takes into account credit risk factors specific to European utilities as specified in this sector methodology as well as factors common to all industries such as management, liquidity, legal structure, governance and country risks which are explained in more detail in the General Corporate Rating Methodology. The following business risk and financial risk indicators are non-exhaustive and may overlap; some may not apply to certain corporates. We may add issuer-specific rating factors, and a company's business model is decisive for the applicable indicators. No rating driver has a fixed weight in the assessment. Please refer to the General Corporate Rating Methodology for more detail.

Figure 1 – Scope's general rating grid on European utilities



* Applies only to electricity/power generators and integrated utilities

5.1 Business risk profile

We adopt a forward-looking approach when analysing a utility's business risk profile. It takes in account the utility's market and sector dynamics, and business drivers. The business risk profile is divided into an industry-related section and a company-specific part.

5.1.1 Industry-related drivers

Three elements constitute our assessment of the industry fundamentals of utilities:

1. Cyclicality and political/regulatory stability;
2. Entry barriers; and
3. Substitution risks.

Cyclicality and political/regulatory stability

To minimise the need for rating changes due to cyclical volatility, we aim to include the impact of the economic cycle in its rating wherever possible. While the utilities industry is often associated with defensive and non-cyclical features compared to industries with inelastic demand patterns, these vary widely depending on the individual business model. We incorporate exposure to economic trends that affect downside volatility of cash flows, as well as the cessation of certain business activities, such as closure of power plants or exploration sites. Downside volatility can arise from either volume risks stemming from high exposure to industrial customers, or volume and pricing risks through commodity exploration or power generation activities. Moreover, a high proportion of residential and commercial customers can help utilities weather economic downturns and exhibit more stable operating performance. Utilities with greater exposure to industrial customers, which are more likely to seek economic alternatives, are more vulnerable to economic cyclicality.

In our view, utilities with a high proportion of non-regulated activities such as exploration/production and power generation capacities at the end of the merit order system show highly cyclical features unless relying on a high proportion of forward-selling. In contrast, operators of electricity grids, gas or water networks, as well as fully regulated power plants display low cyclical characteristics with low substitution risks for offered services with comparatively stable price developments. The cyclical exposure of utilities which sell own-generated or third-party electricity and gas volumes to end-customers depends strongly on the customer structure and energy sourcing. Utilities with a high exposure to industrial customers or with energy sourcing from auctioning carry medium risks, while utilities with a large residential customer base or energy sourcing based on medium- or long-term contracts are considered to have low cyclical risk exposure.

In contrast to other industrial sectors, the public interest in utilities' services makes them more likely to be the target of regulatory action. The regulatory framework and exposure to political intervention is important when assessing a utility's credit risk. Tariffs and cost regulation may impact utilities' cash generation directly, while energy, environmental and tax policies affect it indirectly. Moreover, government intervention may affect issues relevant to the rating such as the power generation mix, changes in the procedure of tariff setting, new safety requirements or the approach to the timing of cost recovery. An unstable and less predictable institutional framework stemming from regulatory and political intervention may increase the probability that utilities will experience financial stress.

Regulations may impact a utility's business model positively on the revenue side by creating high entry barriers (electricity grids/gas and heat networks) and through price stability (renewable energy regulations). But regulations or political intervention can also impose heavy burdens on a utility's credit quality, particularly when regulations are unstable and do not provide a timely cost recovery, are very challenging regarding cost or operating efficiency, or impose high investment requirements (maintenance of grids and power plants). In analysing a utility's credit quality, we assess how a country's regulatory framework may impact and support stability and predictability of its cash flow generation. Issuers with strong credit quality operate in markets characterised by a supportive institutional framework that creates stable and protective regulations, as well as environments with minimal political interference. Issuers at the lower end of the ratings scale often operate under unstable or challenging regulatory environments which are prone to drastic changes that prevent timely cost recovery, or compromise efficiency.

Entry barriers

While the capital-intensive nature of operated infrastructure assets and the high degree of sector regulation imposes high entry barriers in the industry, the extent of business protection from existing or new competitors depends strongly on the operated asset classes and services provided. Highly regulated utilities such as transmission and distribution grid/network operators are seen by us as well shielded from competition, thanks to high entry barriers stemming from an existing non-substitutable infrastructure and protection of service territories through long-term concessions. We assess entry barriers in the area of power generation to be medium. Despite the high capital intensity and long construction periods of new power generation capacities, competition from new power generation capacities can be stiff, particularly from independent power producers, which operate renewable energy capacities. This competition is partly mitigated by competitive marginal power generation costs from partly or fully amortised power plants, as well as by uncertainties about future regulation (i.e. particularly conventional power plants). On the non-regulated downstream side of the utilities business (power supply), entry barriers are generally low, and depend on the competitiveness of grid charges in a particular service territory, and a new entrant's ability to purchase attractively priced energy volumes on the market.

Substitution risks

As with entry barriers from potential new competitors, the degree of substitution risks from existing competitors depends strongly on a utility's service area. Monopolistic structures for operators of gas networks and electricity grids makes substitution risk non-existent. The same applies to operators of regulated renewable energy power plants, which enjoy guaranteed take-off of generated power at fixed feed-in tariffs. The extent of substitution risks for operators of non-regulated power generation assets depends strongly on the power plants' position in a power market's merit order system. Operators of non-regulated power plant capacities with comparatively low marginal power generation costs (i.e. hydro, nuclear power plants at the front of the merit order system) face lower substitution risks, while operators of power plants with higher marginal power generation costs at the end of the merit order (i.e. gas, hard coal, lignite, oil) may face higher substitution risks. Utility-specific features such as a high proportion of hedging or long-term contracts from power purchase agreements with customers can strongly mitigate such substitution risks.

Figure 2 – Scope's industry risk assessment for different utility segments

Cyclicality \ Entry barriers	Low	Medium	High
High	CCC/B	B/BB	BB/BBB
Medium	B/BB	BB/BBB	BBB/A
Low	BB/BBB	BBB/A	A/AA

Non-regulated power generation

Trading activities

Regulated power generation (left) and regulated network/grid operators (right)

We assign the following industry risk levels depending on certain factors:

1. **Regulated network/grid operators:** industry risk assessed at **AA** based on high entry barriers, low cyclicality and low to medium substitution risk
2. **Regulated power generation:** industry risk assessed at **A** based on high entry barriers, low cyclicality and medium to high substitution risk
3. **Non-regulated power generation**: industry risk assessed at **BB** based on medium entry barriers, high cyclicality and low substitution risk
4. **Trading activities:** industry risk for energy retailers assessed at **BBB** based on low entry barriers, low cyclicality and low substitution risk; industry risk for wholesalers assessed at **BB** based on low entry barriers, medium cyclicality and low substitution risk.

As European utilities tend to be highly integrated with upstream, midstream and downstream activities, we assess a utility's industry risks by the proportional recurring EBITDA contribution of such activities. Utilities with an overall low exposure to cyclicality display higher cash flow stability and better control on cost coverage. Utilities which are protected largely by a reliable regulatory framework or offer non-substitutable or less cyclical services, such as operation of energy grids and networks, generation assets that benefit from well-hedged or regulated energy sales or a strong footprint with residential customers, offer greater visibility and stability of cash flows.

This is in contrast to utilities highly exposed to merchant risks in areas such as energy trading, exploration of energy commodities, and certain non-regulated power generation activities.

5.1.2 Competitive positioning

Market positioning

Our analysis of a utility's competitive position focuses on drivers of cash flow stability determined by factors such as the degree of a utility's market position and competitiveness in its service territory as well as the utility's growth prospects in its service territory.

Market position

Though strength and dominance on the market is generally related to a company's size, we note that a utility's sheer size, e.g. as measured by recurring revenues or EBITDA, does not determine credit strength due to often monopolistic structures in a service territory and the low-risk nature of operations. These structures are characterised by high physical entry barriers where a utility's asset base is located (grids/networks, regulated or quasi-regulated energy generation capacities), regulatory or political protection, or by cost competitiveness of an incumbent's power generation mix.

Nonetheless, for power-generating utilities we explicitly take into consideration the total scope of electricity generation – as measured by recurring generation volumes, which is an indicator for the importance of a generator's activities for covering the electricity demand in its relevant markets. Moreover, we take into account the generator's position in the merit order and its exposure to carbon emissions from such assets. A strong position in the relevant market's merit order system indicates reliable and robust cash flow generation, while a weaker position may be paired with uncertain and volatile cash flow generation. Likewise, a generation portfolio that is characterised by low carbon intensity is not faced with transition or stranded asset risk.

Structural aspects (growth prospects) of service territory

While the size of the service territory is not a rating driver, we consider economic and demographic growth prospects to be important for the credit quality of utilities which cover a limited service territory (local and regional utilities). Utilities servicing regions which display great economic prosperity with a wide range of commercial and industrial customers as well as growing or stable demographics show lower risks of cash flow erosion. By contrast, local or regional utilities which cover service territories with weak economic development and a shrinking population face higher risks for cash flow volatility and structural cash flow deterioration.

Figure 3 – Market positioning by rating category

		AA and above	A	BBB	BB	B and below
Market position	Market dominance	National or regional monopoly	Strong position in service territory with little competition from existing or new market participants	Good position in service territory with modest competition from existing or new market participants	Modest position in service territory with significant competition from existing or new market participants	Weak position in service territory with strong competition from existing or new market participants
	Recurring electricity generation volumes*	> 200 TWh	100 to 200 TWh	10 to 100 TWh	5 to 10 TWh	< 5 TWh
	Position of power generation fleet in merit order system*	Very strong position in the merit order and strongly below-average carbon intensity of power generation fleet	Strong position in the merit order and well-below-average carbon intensity of power generation fleet	Good position in the merit order and average carbon intensity of power generation fleet	Modest position in the merit order and above-average carbon intensity of power generation fleet	Weak position in the merit order and well-above-average carbon intensity of power generation fleet
Structural aspects (growth prospects) of service territory		Very strong exposure to residential, commercial and industrial customers with largely hedged activities		Well-diversified base of residential, commercial and industrial customers with largely hedged activities	Customer mix biased towards commercial and industrial customers with largely hedged activities	Strong exposure to industrial customers without major hedging activities

	AA and above	A	BBB	BB	B and below
	Economically growing service territory with many industrial and commercial customers and growing demographics		Economically stable service territory and stable demographic developments	Economically modest service territory and slightly declining demographic developments	Economically weak service territory with few commercial and industrial customers and continuously shrinking demographic developments

* These rating factors only apply to utilities which are significantly exposed to electricity generation.

Diversification

Diversifying business operations helps to mitigate the risk of a single business segment disproportionately impacting a company's cash flow and credit quality. A utility's diversification determines its ability to offset cash flow volatility arising from economic cycles and industry dynamics, regulatory changes, and commodity price fluctuations. This is particularly important as utilities are exposed to multiple segments with different levels of cyclical exposure and substitution risks. As a general rule, concentration risk diminishes when segments are balanced across different business operations, geographic regions and service territories, regulatory regimes, fuel sources, suppliers and customers. Segment diversification reduces a utility's risk of experiencing sudden or rapid deterioration in its overall creditworthiness because of adverse developments in any part of its operations.

Geographical diversification

Spreading activities across various geographical regions and jurisdictions generally lessens the impact from external shocks such as regulatory changes, economic downturns or adverse weather conditions. A balanced exposure across different service territories with low price correlations or similar demand patterns can mitigate cash flow volatility from unfavourable market developments, while enhancing credit quality. We view this as a positive rating driver. In contrast, operations in a single geographical market may negatively affect a utility's credit quality, particularly if a service territory is economically weak, i.e. burdened by unfavourable demographic developments or a low-diversified customer base, or when regulations may change drastically.

Segmentation – horizontal diversification | vertical integration

We consider solid segmentation across different energy infrastructure segments to be a positive rating driver.

Horizontal diversification

This type of segmentation relates to a utility's horizontal diversification, such as: electricity generation; transmission and distribution to energy supply; other infrastructure activities, such as transportation, water, public baths, energy services, waste disposal or recycling. A portfolio balanced across different business segments with different cyclical patterns – such as less cyclical energy transmission/distribution or water supply, and more cyclical (conventional) energy generation – reduces the incremental effects of business disruptions or temporary negative operating cash flows in one or more business segments. Our assessment takes into account whether a utility's core businesses can sustainably balance out, cover or subsidise other segments with highly volatile cash flows such as exploration/production or conventional energy generation or which are chronically loss-making, like public baths or public transport.

Vertical integration

We see the degree of vertical integration in a utility as an important rating driver for energy-generating utilities. In general, we regard vertical integration along the utility value chain as a credit-supportive factor, particularly when a utility that supplies energy to retail, commercial or industrial customers can procure large quantities from its own energy-generation or exploration assets. The same applies to integrated utilities that provide grid and/or network services on top of energy generation and supply, because the cash flow from grid/network activities typically provide cash flow stability for the entire group.

While strong vertical integration with high exposure to upstream activities, such as exploration/production and power generation may enhance a utility's profitability and footprint under benign economic conditions, it is also linked to extended business risks. Such business risks include stronger cash flow volatility, higher capex requirements, an increased asset concentration and potentially significant losses if market fundamentals are weak. As a result, a utility's vertical integration is evaluated in light of future market fundamentals (e.g. pricing, demand patterns, regulatory environment).

Concentration – fuel, asset, supplier and customer concentration

Concentration risk can be a key aspect for determining a utility's creditworthiness, particularly in case of detrimental events such as continuously adverse weather conditions, operating disruptions, ESG controversies or detrimental regulatory interventions. Concentration risks may refer to a concentration of fuel types or assets in a utility's power generation portfolio (fuel type and/or load coverage, such as base-, mid- and peak-load power) or counterparties in the supplier or customer base. A high concentration in any of these factors may lead to operational and financial distress, for example when macroeconomic conditions make power generation in the existing power generation portfolio not economically viable or the cancellation of major suppliers or sales contracts burden operations and cash flow generation. Less asset concentration also reduces the risk of stranded assets or physical risk should the value of any of a utility's operating assets and the corresponding cash flow be hampered by adverse market dynamics. Hence, the lower the concentration risk, the less vulnerable a utility's cash flow generation.

Figure 4 – Diversification by rating category

		AA and above	A	BBB	BB	B and below
Geographical diversification		Very strong geographical diversification across pan-European energy markets with little price correlation	Strong geographical diversification across pan-European energy markets with little price correlation	Geographical diversification across different regional energy markets with little price correlation	Geographical diversification across different regional energy markets with significant price correlation	No geographical diversification across different energy markets with little price correlation
Segmentation	Horizontal diversification	Very strong business segmentation across a well-balanced mix of cyclical and non-cyclical activities with little or no exposure to chronically loss-making or very volatile utility segments	Strong business segmentation across a well-balanced mix of cyclical and non-cyclical activities with little or no exposure to chronically loss-making or very volatile utility segments	Moderate business segmentation across different utilities segments with little exposure to chronically loss-making or very volatile utility segments	Modest business segmentation across different utilities segments with significant exposure to chronically loss-making or very volatile utility segments	High exposure to chronically loss-making business segments
	Vertical integration	Reasonable vertical integration with sizeable customer base			No vertical integration with concentration on higher-risk non-regulated activities	
Concentration	Supplier and customer concentration	Very strongly diversified supplier and customer base	Strongly diversified supplier and customer base	Modest dependence on single suppliers or customers	Moderate dependence on single suppliers or customers	High dependence on single suppliers or customers
	Asset/fuel concentration	Very low dependency on specific fuel types or single assets	Low dependency on specific fuel types or single assets	Modest dependency on specific fuel types or single power plants	Moderate concentration risks relating to specific fuel types and power generation assets	High concentration risks relating to specific fuel types and power generation assets

Operating profitability and efficiency

Operating profitability

Profitability is a key indicator for a company's competitive position as well as its technological competitiveness and efficiency. Profitability and efficiency is indicated by both the level and volatility of a utility's margins. Profitability can vary strongly depending on core business activities. Our analysis compares a utility's profitability to those of its direct peer group. Such a peer group strongly depends on if the sub-sector of a utility is exposed more to upstream/midstream activities, such as power generation and grid businesses, or to downstream activities, such as power supply and energy services.

We regard a highly predictable and sustainable margin from regulated or quasi-regulated utility segments, such as regulated power generation with fixed tariff structures (feed-in tariffs or long-term power purchase agreements) or regulated transmission and distribution activities as credit-positive. While non-regulated generation may improve a utility's margin profile, which is typically credit-positive, it may also increase the volatility and reduce the predictability of cash flows. Depending on the market environment, it may also lead to severe losses that remaining business activities would then need to cover.

When measuring profitability, a utility's Scope-adjusted EBITDA margin is the best proxy; its level and volatility depends largely on business activities, that is, upstream, midstream and downstream utility segment exposures. Moreover, a utility's profitability that is strongly exposed to the diverging margins of different business segments and asset capital intensities is assessed based on the Scope-adjusted return on capital employed (SaROCE). Typically this applies to integrated utilities that are exposed to generation and/or supply.

For utilities with a high exposure to upstream activities, the quality and attractiveness of the power generation portfolio mainly ensures long-term profitability. Given the high business risks and the higher indebtedness of such infrastructure assets, profitability tends to be high under sound economic conditions, but may fluctuate strongly and even be negative when market conditions are weak. Power generators that have favourable energy mixes in the merit order system and low marginal costs of production (such as hydro and other renewables or nuclear) provide solid use of power plant capacities and solid profitability of above 40%, even in economic downturns. By contrast, utilities which are heavily exposed to price and volume risks through thermal power plant capacities display more volatile profitability patterns. Likewise, utilities which are heavily dependent on weather conditions, e.g. independent power producers that run

smaller generation portfolios with little granularity, may face larger swings in profitability. Grid operators usually achieve high and predictable margins, but the overall margin level strongly depends on the applicable regulatory framework and the timeliness in passing on operating and capital costs.

Utilities which are more exposed to downstream activities tend to show low supply or trading margins averaging 0-15%. However, lower margins in downstream activities can be widely controlled and are thus more predictable and recurring/sustainable from a credit perspective. Disadvantageous energy procurement and hedging or an inability to pass on higher procurement costs through tariff adjustments can also result in operating losses.

Our analysis also considers the volatility of operating margins. A relatively low (high) volatility compared to what is typical for the industry may positively (negatively) impact our assessment of profitability. We would typically base our assessment on margin fluctuations over an extended period of time, including (a) stress period(s). Such assessment is based on the standard deviation and/or coefficient of variance of a utility's EBITDA margin compared to the relevant peer group.

Efficiency

Given the strong correlation between profitability and operating efficiency, we consider efficiency factors such as the level and volatility of load factors for a utility's power generation assets, the economic age and technological status of power generation and transmission/distribution assets. In addition, we assess a regulated utility's cost position against the industry benchmark. Highly volatile or below-industry average efficiency metrics are seen as critical for utilities' credit quality as they might point to structural operating problems, less predictable future cash flow patterns or deteriorating free operating cash flows, burdened by high capex requirements.

Figure 5 – Operating profitability and efficiency by rating category

		AA and above	A	BBB	BB	B	CCC and below
Scope-adjusted EBITDA margin*	Upstream/midstream exposure	> 60%	40 to 60%	25 to 40%	10 to 25%	< 10%	Recurring EBITDA insufficient to cover maintenance capex and interest payments
	Downstream exposure	> 24%	18 to 24%	12 to 18%	6 to 12%	< 6%	
Volatility of group margin		Very stable profitability patterns		Stable profitability patterns	Moderately volatile and non-controllable profitability patterns	Strongly volatile and non-controllable profitability patterns	
Scope-adjusted return on capital employed*		> 20%	15 to 20%	10 to 15%	5 to 10%	0 to 5%	< 0%
Efficiency		Highly cost-competitive power generation portfolio which provide stable load factors			Power generation assets which are less cost efficient and which may display strongly fluctuating load factors		
		Above-average economic age of power plant portfolio or transmission/distribution assets			Below-average economic age of power plant portfolio or transmission/distribution assets		
		Above-average efficiency (e.g. load factors, grid losses, efficiency benchmarks)			Below-average efficiency (e.g. load factors, grid losses, efficiency benchmarks)		
		Tariff system which allows timely pass-through of increased cost base			Significant time lags in the utility's cost recovery from increased cost base		

* This rating factor only applies to integrated utilities which display significantly different margin patterns in its business segments, such as generation and energy trading/supply, and to utilities which are significantly exposed to energy generation. We typically consider a long-term average (five years or more) when assessing profitability measures. Moreover, we may put more emphasis on forecasts if these are more representative of the credit profile, e.g. after major investments or divestments, or when pricing dynamics are expected to change significantly.

5.2 Financial risk profile

The financial risk profile indicates a company's financial flexibility and viability in the short to medium term. A company with a strong financial risk profile is more likely to be resilient to economic downturns, adverse industry dynamics, unfavourable regulation or an unexpected loss of a revenue source. The ability to retain financial flexibility during an economic downturn is a rating driver as it indicates an ability to cover its debt obligations at all phases of the economic cycle.

5.2.1 Credit metrics

Our assessments of leverage and debt protection measures take the following into account:

Leverage

- Scope-adjusted debt/EBITDA (x)

Interest cover

- Scope-adjusted EBITDA/interest cover (x)

For the definitions of such metrics and their inputs pls refer to our **General Corporate Rating Methodology**.

Utilities typically have greater leverage and longer debt maturities than the average industrial company, due to the long-term nature of infrastructure assets combined with more predictable cash flows. Utilities also often benefit from supportive regulations, a monopoly-like structure in respective service territories, and, in many cases, a guarantors' liability from a government body which allows for higher leverage. The higher indebtedness is usually covered by higher levels of relatively stable asset values and backed by solid debt protection measures. Moreover, some utilities, particularly independent power producers, use a significant amount of non-recourse debt for particular projects. This will be taken into account in the interpretation of leverage in case the exposure to such financing is significant.

In calculating key credit metrics, we use items from a company's cash flow statement, reflecting its cash-oriented approach to calculating debt protection.

While historical financial performance is important and provides an indication of a corporate's financial position, our ratings emphasise a company's future financial performance.

We adjust financial information when the impact on credit metrics is considered material. Our analysis typically adjusts the debt of a utility by various items, including off-balance sheet debt from the leasing of long-term assets (if not reflected by IFRS 16), debt-like provisions such as unfunded pension provisions and unfunded asset retirement provisions for decommissioning power plants or site remediation or other debt-like contingencies[1]. We do not adjust the Scope-adjusted debt for a discounted exposure to long-term purchase commitments, i.e. power purchase agreements for off-takers of renewable energy contracts as we do not see a major difference to shorter-term power purchase commitment through hedges closed with power generators directly or contracted through power exchanges.

We typically exclude margining positions from cash and cash equivalents when computing Scope-adjusted debt or liquidity, regardless of whether they are net assets or net liabilities. This is for several reasons. Margining deposits are usually temporary (working capital), can be strongly volatile and depend on the gap between contracted prices and market prices at a particular reporting date. In addition, margining deposits do not represent a reliable source of liquidity or the real requirement for a cash outflow as the contracts are usually settled and the deposits are merely used as a cash collateral. Such positions are not deemed a cash equivalent that can freely be used for covering operating expenses or maturing non-related debt positions.

[1] Provisions made for asset retirement obligations reflect commitments for the disposal, dismantling or decommissioning of assets during their operation and/or at the end of their lifetime in sectors such as power generation, mining or commodity exploration. Such obligations can vary noticeably depending on each country's legislation and regulations and the technologies and industrial practices used in each company. Scope highlights that the characteristics of asset retirement obligations are different to conventional debt regarding timing, measurement of the estimated obligation including potential asset-salvage values, tax effects or funding mechanisms among others. In many cases, the expected asset retirement obligation is covered in full or to a large extent either by funds set aside to cover the future obligations or by the expected scrap value relating to the assets to be retired. Moreover, the payment schedule may often extend over a very long-time horizon, with obligations arising more than 20 years after the cessation of assets. As with pension provisions, Scope-adjusted debt would consider the unfunded part of such obligations (reported accounting values on the balance sheet). Dedicated retirement fund assets are likely to cover required payments in times of economic distress. Scope's debt adjustments for asset retirement obligations aim at capturing the nature of the expected payments on an individual basis which Scope deems appropriate for the corresponding assets/activities (i.e. power plants, exploration sites, waste disposal). When assessing the debt burden from asset retirement obligations, Scope takes into account the likely funding requirement net of deferred tax assets that are related to such obligations. The reasoning behind this approach is twofold: On the one hand, Scope views potential funding needs for very-long-term obligations as not overly representative of the creditworthiness of a corporate and of the full coverage of interest-bearing debt instruments. On the other hand, Scope points to the strong impact of discount rates on very-long-term provisions. As such discount rates may fluctuate strongly over a long time horizon, a full approach on the theoretical funding requirements may be misleading.

In analysing a utility's leverage, we differentiate between non-regulated or regulated activities. For the assessment of debt protection, the unified approach for all corporates applies as laid out in our **General Corporate Rating Methodology**. When assessing credit quality, we take into account the credit metrics deemed to represent the rated entity's current and future creditworthiness, reflecting a sustained level of credit metrics and taking into account their volatility and seasonality.

Figure 6 – Credit metrics by rating category[2]

	AA and above	A	BBB	BB	B	CCC and below
Leverage - Scope-adjusted debt/EBITDA (x)						
Non-regulated utilities	< 1.0	1.0 to 2.5	2.5 to 4.0	4.0 to 5.5	5.5 to 7.0	> 7.0
Regulated utilities	< 1.5	1.5 to 3.0	3.0 to 4.5	4.5 to 6.0	6.0 to 9.0	> 9.0
Interest cover - Scope-adjusted EBITDA interest cover (x)	> 10.0	7.0 to 10.0	4.0 to 7.0	2.0 to 4.0	1.0 to 2.0	< 1.0

As European utilities tend to be highly integrated with an exposure to regulated and non-regulated activities, we apply a blended approach when assessing the leverage of a utility with exposure to both activities. Utilities with an exposure to non-regulated and regulated activities can bear a higher leverage than pure non-regulated utilities, but a lower leverage than purely regulated utilities for achieving the same rating assessment.

We deliberately do not base the assessment of a regulated grid/network operator's leverage on metrics related to the regulatory asset base (RAB). For consistency across jurisdictions we use a leverage measure based on audited financials and not a metric that could be impacted by different approaches on how to calculate RAB, the timing of asset inclusion, deviations between regulatory frameworks or the age of the RAB.

5.2.2 Cash flow generation

Utilities tend to be highly capital intensive. High investment is required to continuously expand, maintain or decommission infrastructure assets to sustain operating efficiency or adapt to changing market conditions. In particular, thermal power-plant capacities, new transmission corridors (e.g. related to offshore wind parks or interconnectors) or even the strengthening of existing transmission/distribution grids require high upfront investment, which may result in negative FOCF because lead times for these investments tend to span a few years. Such investment activities are covered either by the utility's internal operating cash flows or require new debt and/or equity or asset rotation through the disposal of selected assets. We qualitatively assess a utility's investment coverage through its internal and external financing ability.

A utility that qualifies for an investment-grade assessment on cash flow generation is expected to be able to fully fund its investments internally on a sustained basis, whereas a utility's cash flow generation would be considered non-investment-grade if it were dependent on external funding for an extended period of time. Our assessment takes into account a utility's standing in the capital markets (e.g. track record for debt financing, recognition by investors) and the diversification of its financing instruments. Utilities with a large funding base and a proven track record of tapping various funding channels for external funding needs are viewed less critically than those that rely on very few external funding sources.

Figure 7 – Cash flow generation by rating category

	AA and above	A	BBB	BB	B	CCC and below
Internal financing capacity and dependence on external funding/financing	Very high internal financing capacity with structurally very high positive free operating cash flow across the investment cycle	High internal financing capacity with structurally neutral-to-positive free operating cash flow across the investment cycle	Solid internal financing capacity with structurally neutral-to-lightly positive free operating cash flow across the investment cycle	Moderate dependence on external financing across the investment cycle	Strong dependence on external financing across the investment cycle	Very strong dependence on external financing across the investment cycle

[2] For the rating of European utilities, Scope does not explicitly use FFO-related credit metrics such as FFO/interest cover or FFO/Scope-adjusted debt. Scope is fully aware of the cash flow impact under different tax regimes (e.g. corporate taxes or specific technology-specific taxes) which could lead to strong deviations on FFO-based credit metrics for utilities in different jurisdictions. We indirectly reflect lower taxes through the cash flow impact on a company's Scope-adjusted debt and within the peer group context of European utilities.

For the definition of FOCF pls refer to our General Corporate Rating Methodology.

5.2.3 Liquidity

There is no sector-specific assessment of a utility's liquidity. Liquidity is addressed in our General Corporate Rating Methodology.

5.3 Supplementary rating drivers

5.3.1 Financial policy

Our assessment of financial policy as part of the supplementary rating drivers is described in our General Corporate Rating Methodology.

5.3.2 Governance and structure

Our assessment of governance and structure as part of the supplementary rating drivers is described in the General Corporate Rating Methodology.

5.3.3 Parent/government support

We recognise that a utility's likelihood of corporate default may be affected by structural issues linked to its shareholder structure or the public importance of such companies. Many utilities are controlled by sovereign, sub-sovereign shareholders or other utilities. If required, parent companies may have to provide direct funding or recapitalisation because of a contingent liability, such as a guarantor liability. A sovereign or sub-sovereign could bail out a utility even if no stake exists, as they may perceive sufficiently high social or political risks arising from distressed utilities. This may be because of its position as a major local or regional employer, or because of sufficiently high public interest that the provision of public services continues.

When assessing the credit quality of a utility that may benefit from government support, we incorporate the sovereign's or sub-sovereign's capacity and willingness to bail out a utility in financial distress, as laid out in **Scope's rating methodology for Government Related Entities**.

The impact on a potential rating uplift depends strongly on our assessment of the likelihood of such a bail-out action, which reflects a sovereign's or sub-sovereign's willingness to cover liquidity gaps of a utility. Such willingness might be characterised by contractual obligations such as guarantees or comfort letters. Moreover, the assessment on the willingness of a government body to subsidise a utility in need reflects our view on the strategic importance of a controlling share in the utility.

The more likely that sufficient and timely government intervention takes place, the higher the impact on the rating. Utilities that hardly benefit from such potential support will be rated with the utility's standalone credit assessment. Utilities which may benefit from the extraordinary support of a sovereign or sub-sovereign could be rated up to three notches higher than the standalone credit assessment (bottom-up approach). The incorporation of a three-notch uplift will only occur in rare cases where we deem the controlling entity's capacity and willingness to be strong.

5.3.4 Peer context

Our assessment of peer context as part of the supplementary rating drivers is described in the General Corporate Rating Methodology.

5.4 Additional methodology factors - ESG

Credit-relevant environmental and social factors are implicitly captured in the rating process, while corporate governance is explicitly captured at the 'governance and structure' analytical stage (see 5.3.2).

During the corporate rating process, we implicitly capture environmental, social and governance (ESG) factors that have a material credit impact. We conduct an explicit corporate governance assessment during the corporate rating process. Our rating analysis remains focused on credit quality and credit assessment drivers. We only consider an ESG factor relevant to our credit rating process if it has a ubiquitously discernible and material impact on the rated entity's cash flow profile and, by extension, its overall credit quality.

Contrary to ESG ratings which are based on quantitative scores for different rating dimensions, credit-relevant ESG drivers can directly or indirectly all the rating elements which make up our assessment of an issuer's business risk profile, financial risk profile and supplementary rating drivers. Identified ESG rating factors reflect an opinion in a relative context (factors are ordinal rather than cardinal).

In the context of utilities we see the main credit-relevant ESG factors in the following areas

- energy transition (e.g. decarbonisation and denuclearilisation; decentralisation);
- efficiency related to energy, resource, cost and assets;

- digitalisation;
- regulation, incentivisation and political intervention.

6. Issuer rating

The final issuer rating is based on our analysis of the business risk profile, financial risk profile and supplementary rating drivers. The rating committee decides on the relative importance of each rating driver. The business risk profile and financial risk profile are generally weighted equally for companies that are perceived as crossover credits between investment-grade and non-investment-grade related to the final issuer rating. The business risk profile is typically emphasised for investment-grade companies, while the financial risk profile is mostly the focus of ratings assigned to companies that are perceived to have high yield credit profiles. However, the latter also depends on the level of the financial risk profile. Less focus is granted to strong financial risk profiles of companies showing a weak/vulnerable business risk profile (in the B or low BB category) since for such companies the financial risk profile is subject to higher volatility. This takes into account that the credit rating of companies with business risks that reflect weak or moderate credit quality should not be bolstered by a temporary strong financial risk profile. Hence, the weighting between the business risk and financial risk profiles is adapted to each issuer's business model and market(s).

7. Additional methodology factors

For more details on our rating Outlooks for issuer ratings, long-term and short-term debt ratings, the recovery analysis see the **General Corporate Rating Methodology**.

8. Appendix

8.1 Definition of financial items and key performance indicators applicable only to the utilities industry

The General Corporate Rating Methodology defines in detail the indicators used in our financial risk profile assessments.

The following additional key performance indicators are used for the assessment of European utilities.

Scope-adjusted return on capital employed (%)	
Profitability and efficiency	
$\frac{\text{Scope-adjusted EBITDA}}{\text{Average capital employed}}$ (average property, plant and equipment + average intangible assets + average current assets – average short-term liabilities)	This ratio measures how efficient a company is at generating earnings from its assets. It allows a comparison between companies with varying business mixes and capital intensities (e.g. upstream versus downstream). Balance sheet values are typically used as reported, while EBITDA is adjusted for significant, exceptional or non-recurring items. Scope takes into account the average exposure of capital employed taking the average of the balance sheet values for periods t and t-1.

Load factor (%)	
Profitability and efficiency	
$\frac{\text{Average load of individual power plants or generation technologies}}{\text{Maximum load in given time period for the power plant or the generation technology}}$	This ratio reflects the utilisation of power plants. The load factor depends on the fuel type but also on the merchant model of a power plant operator. A load factor that is below fuel-specific power generation expectations may point to insufficient efficiency and profitability.

8.2 Related documents

For more information, please refer to the following documents:

- General Corporate Rating Methodology
- Government Related Entities Rating Methodology
- Credit Rating Definitions

8.3 Supplementary elaborations about the application of the bottom-up approach of Scope's rating methodology for government-related entities

When assessing the rating impact of a utility's status as a government-related entity under the bottom-up approach of Scope's Government Related Entity Rating Methodology, we take into account the public sponsor's capacity and willingness to provide financial support or to bail out a utility in financial distress.

The extent of the upward notching is based on our assessment of the public sponsor's: i) capacity to provide a credit uplift, defined as the rating differential between the public sponsor and the government-related entity's standalone credit assessment; and ii) willingness to provide support. Each analytical component is assessed as 'High', 'Medium' or 'Limited'. Both assessments are then mapped to an indicative credit uplift as laid out in Scope's Government Related Entity Rating Methodology. As the ratings framework pertaining to a specific combination of the public sponsor's capacity and willingness to provide financial support gives a range of notches, i.e. 0; ≤1; ≤2; ≤3 notches, that can be applied to the standalone credit assessment of a rated entity, Scope determines the notching based on a number of factors such as:

- Strategic importance and systemic relevance of the utility in the country (and potentially beyond) which depends on the rated entity's business model and potentially legal frameworks or strategic policies
    - Classifying the utility as system-critical or as a core investment for the sovereign/sub-sovereign, either explicitly stated or implicitly perceived
    - Restricting the privatisation of the utility or the sale of equity to other investors

- Requiring a particularly minimum equity stake by the sovereign/sub-sovereign sponsor

- Shareholder structure
    - Whether the utility is largely controlled by a single sovereign/sub-sovereign sponsor or a smaller/larger group of sub-sovereign shareholders that can be regarded as a group speaking with one voice and that could equally/proportionally support the utility if needed
    - Whether the utility is fully or just majority-owned by the sovereign/sub-sovereign sponsor(s)
- Share of operations within and beyond the domestic market
- Visibility on potential funding support pertaining supporting liquidity buffers and/or investment programmes

The more likely sufficient and timely government intervention is, the higher the up-notching on the utility's standalone credit assessment. This means that with the same combination of capacity and willingness to provide financial support, the rating of a utility with a single sovereign/sub-sovereign authority could benefit from more notches than the rating of a utility with a group of different public shareholders that might not quickly take decisions on financial support. Likewise, the rating uplift on the standalone assessment of a fully state-owned utility is higher than for a utility only partly owned by a sovereign/sub-sovereign sponsor, all other things being equal. Similarly, a utility for which privatisation or reducing the public ownership to a non-controlling stake is not allowed will likely be granted more notches on the standalone credit assessment than a similar utility for which a change in its shareholder structure that could lead to a loss of the government control is possible. The more explicitly the systemic relevance of a particular utility has been publicly communicated, the larger the ratings differential between standalone and final issuer could become. Utilities for which the sovereign/sub-sovereign shareholders have provided equity or other funding support in the past (e.g. to support liquidity and/or to support investment requirements) may also benefit from a stronger up-notching from their standalone credit assessment compared to similar utilities for which such support exists only in theory. The same applies when such support has officially been signalled by the government. Ultimately, the rating uplift for a utility that is solely exposed to its domestic market is likely higher than for a utility that has significant activities outside the domestic market. In the latter case, it might be likelier that the utility is directly or indirectly forced to sell assets abroad in order to avoid financial support provided by the sovereign/sub-sovereign shareholder.

The following overview provides pairs of rating cases with different criteria mentioned above that would likely lead to a different up-notching on a utility's standalone credit assessment. These cases are under the assumption that apart from the differentiating factor, all other features are equal. In practice, it is unlikely that there would be just one differentiating factor, hence, multiple considerations define how many notches are granted for a government-related entity status.

Figure 8 – Cases with differentiating factors on a utility's government-related entity status that would result in different up-notching on the standalone credit assessment (other things being equal)

	Utility 1a	Utility 1b	Utility 2a	Utility 2b	Utility 3a	Utility 3b	Utility 4a	Utility 4b
Public Sponsor support assessment								
Capacity to provide a credit uplift	Limited	Limited	Medium	Medium	High	High	High	High
Willingness to provide support	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Potential rating uplift on the standalone credit assessment	0 - 1 notch	0 - 1 notch	1 - 2 notches	1 - 2 notches	1 - 3 notches	1 - 3 notches	1 - 3 notches	1 - 3 notches
Differentiating factors[3] that can determine the number of notches granted, within maximum up-notching								
Share of business outside of domestic market	Significant	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant
Shareholder structure	Majority owned single public shareholder	Majority owned single public shareholder	Fully owned by single public shareholder	Fully owned by group of public shareholders	Majority owned single public shareholder	Majority owned single public shareholder	Fully owned by single public shareholder	Fully owned by single public shareholder
Visibility on past and future potential funding	Low	Low	Low	Low	High	Low	Low	Low
Strategic importance	Not explicitly stated	Not explicitly stated	Not explicitly stated	Not explicitly stated	Not explicitly stated	Not explicitly stated	Explicitly stated	Not explicitly stated
Notches granted	**0**	**+1**	**+2**	**+1**	**+2**	**+1**	**+3**	**+2**

[3] Differentiating factor highlighted in yellow and all other things being equal for the rating pairs.

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