



Europe Economics

# Response to questions. WACC calculation for the Caribbean Netherlands

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Europe Economics  
Chancery House  
53-64 Chancery Lane  
London WC2A 1QU

Tel: (+44) (0) 20 7831 4717  
Fax: (+44) (0) 20 7831 4515

[www.europe-economics.com](http://www.europe-economics.com)





# 1 Response to questions

Following the consultation period for the WACC for the Caribbean Netherlands, two comments were made in relation to the work undertaken by Europe Economics.

- **Comment 1:** ContourGlobal argues that Zespol should not be included in the peer group, because of government intervention in the Polish energy sector.
- **Comment 2:** ContourGlobal argues that the peer group for 'production only' is biased towards European companies, with too little representation from Latin and South America. This fails to reflect the regional risk of investing in the Caribbean Netherlands.

The comments are quite minor and in our answer we will show that they do not have significant implications in the results.

## **Comment 1: Inclusion of Zespol**

ContourGlobal argues that Zespol should not be included in the peer group, because of government intervention in the Polish energy sector. ContourGlobal argues that Zespol's beta is materially low and unreliable due to the Polish government's intervention in the energy sector. The government intervention ContourGlobal is referring to is the acquisition of EDF Polska (one of Zespol's competitors) by the Polish state.

We shall look at this claim from the point of view of the rationale of the comment and the empirical implications.

### **a) Rationale of the comment**

ContourGlobal states that there is strong academic support "for the idea that government intervention biases a firm's beta downwards". It also explains that "government intervention does not typically co-vary with the market" and "investor returns in industries facing government intervention are less correlated with the market because those returns are determined by that government intervention instead of market factors".

ContourGlobal then reports findings of three papers. The findings of each paper are: (1) "firms with smaller government stakes outperform firms with larger government stakes"; (2) "regulatory shocks ... had a significant effect on the beta" (although these effects are not reported in the note); (3) in the context of the privatised incumbent provider of telecoms services in the UK "the authors found that regulatory announcements had a significant effect on the estimated beta, but that it was not always possible to predict the direction of the impact".

At a high level, this entire objection appears to us to be misconceived. It is indeed plausible that sectors subject to government intervention have a different beta (perhaps lower) than sectors not subject to government intervention. But the imposition of a price control is a paradigm form of government intervention. Indeed, for precisely that reason the use of comparators in industries subject to government intervention (typically in the form of a price control similar in nature) is preferred to the use of comparators from unregulated sectors.

Government intervention can of course take a number of forms. But in the case of Zespol, the effect of the government intervention in EDF Polska is to reduce the pricing freedom of Zespol and its

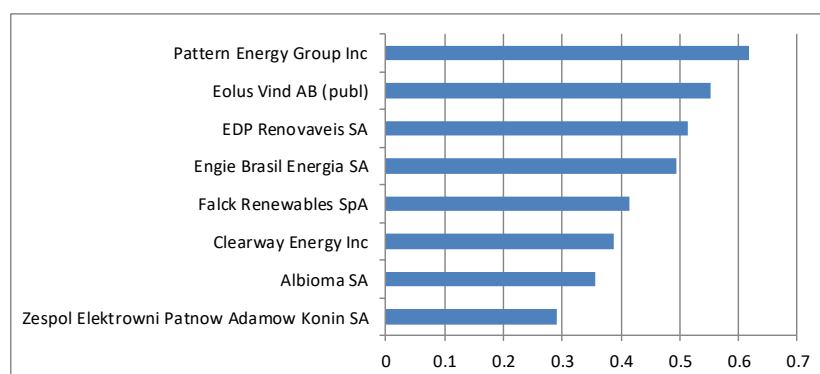
scope to increase its market share, by controlling its rival. In a similar way, a price control reduces the pricing freedom of regulated firms.

### b) Empirical implications

We note that the ACM methodology uses a median estimator and this is done precisely to diminish the impact of any extraneous or outlier observations. This would also be the case if Zespol were to be considered an outlier observation. Small changes of the estimated asset beta for that company do not impact the median estimator used.

We have also analysed in detail the distribution of the asset betas used in the median and they reflect a fairly smooth distribution without important outliers or breaks in the values. Zespol appears at the bottom of the asset betas but these are not particularly different from the values observed in the sample. See Figure 1 where we show that Zespol could be considered an outlier in the low end in the same way that Pattern Energy Group could be considered an outlier in the upper end.

**Figure 1: Asset betas used in our analysis**



Source: WACC calculation for the Caribbean Netherlands.

We also observe that asset betas in the orders of 0.3 are not uncommon in fossil electricity production (for example, we have found 6 asset betas in the US which range between 0.14 and 0.43). So the presence of Zespol is representing this feature of this sector, and hence there is no reason to exclude it from the analysis.

Finally, the use of the median is also an argument for dismissing any influence of Zespol. The construction of the median in this case implies that the estimate is calculated as the average of the values for “Engie Brasil Energia” and “Falck Renewables” (this is after taking into account the ordered ranking obtained after using all observations and the feature that these two companies lie in the middle of the distribution). Removing Zespol shifts the median to 0.49. Removing Zespol and Pattern Energy Group brings it back to 0.46. The properties of the median imply that if Zespol would to be considered as having too much an extreme value we could change its asset beta and bring it from 0.29 to any value below 0.42 and the median would be unaffected.

In conclusion, we think that removal of Zespol is not justified as Zespol meets all the criteria of a suitable comparator. Moreover, inclusion of its estimated low value has little impact in the results and modifying slightly such value (to account for any risk unaccounted for) would not change our main estimate.

A further point is that if Zespol were to be excluded without replacement or were to be replaced by a non-fossil-fuel-based energy firm, that would have negative implications for the balance of

energy sources amongst the comparators relative to the balance for the regulated entity. We explore this point in more detail below.

## **Comment 2: Little representation from Latin and South America.**

ContourGlobal argues that the peer group for ‘production only’ is biased towards European companies, with too little representation from Latin and South America. They claim this fails to reflect the regional risk of investing in the Caribbean Netherlands.

We answer this comment by explaining our method and see the empirical implications of changing the comparator group.

### **a) Justification of our method**

ContourGlobal argues that as our peer group only has one Latin American firm it doesn’t take into account the regional risk involved in investing in the Caribbean Netherlands. We argue that our selection was based on rigorous checks such that the companies selected are sufficiently liquid and are involved in similar activities to the regulated entities. We believe that as a result the risk profile of the chosen peer group is the closest to the regulated entities.

ContourGlobal argue that our calculation of the risk-free rate and ERP is based on all three regions equally and so the peer group should also be based on all three regions. Our response to this argument is that for the risk-free rate and ERP calculations we use the average of all three regions to get a value that would be applicable to the Caribbean Netherlands but for the peer group calculations, our analysis is based on the median value for firms offering the most similar activities to the regulated entities. The use of the median enables us to find the most suitable firm within the peer group irrespective of the region.

A further point here is that the proper locus for regional risk effects is the ERP. There is no intrinsic reason why the beta should be expected to be higher in a region that is higher-risk. Indeed, intuition might even suggest the opposite — that when there are more sources of risk, correlation to energy sector risk might be lower. A potentially more relevant issue, however, is the relationship between national energy intensity and beta. We should expect betas of energy-producing firms to be higher in countries where energy is a greater proportion of GDP. That could be relevant for countries where there were higher proportions of GDP arising from energy-intensive activities such as mining or certain forms of manufacturing, relative to economies with higher proportions of services. However, in the case of the Caribbean Netherlands, major industries include tourism, offshore finance and petroleum transshipment — none of which should be expected to imply large domestic energy use relative to GDP. Hence we would not see a strong reason, in this case, to believe that energy betas should be much higher than those for European or US comparators.

### **b) Empirical implications**

Our initial peer group was constituted of companies from the three geographical regions, in a split of 5, 3, and 2 (for Europe, North America and Latin America, respectively), as these were the companies that reflected better the activities of ContourGlobal. The group was reduced to 5, 2, and 1 due to some additional liquidity conditions imposed (based on the bid-ask spread). As a result, it is true that the sample for Latin America was reduced (from 2 to 1), but it is nonetheless also true that the comparators for North America were also reduced (from 3 to 2). As we will see, inclusion of particular new peers from Latin America could bring up the asset beta (although only marginally) but this is lowered if comparators are added that maintain the sample balance between different energy sources — something ContourGlobal did not recognise. Adding new comparators from “Hydro” or other renewables (“Other”) whilst leaving the number of fossil fuel comparators unchanged (or

dropping one, in the case of Zespol — see above) changes the balance of energy sources from lower-beta sources (fossil fuels) to higher-beta sources (“Hydro” or “Other”). That is the key reason the median beta is raised by CountourGlobal’s proposal, rather than because of a shift in the geographical balance.

To test the implications of an energy-balance-corrected variant of CountourGlobal’s proposal we have proceeded as follows. We have included the new comparator suggested by ContourGlobal: “Compania Energetica Sao Paulo”, and note this is classified as a hydroelectric company. To keep a good balance with other sectors, we have also calculated asset betas for firms in sectors “Fossil” (this includes firms that generate electricity mainly through coal, oil and other fossil fuels), “Hydro” (this includes firms that generate electricity mainly through water), and “Other” (this includes firms that generate electricity mainly through Biomass and other renewables) in Latin America and North America.<sup>1</sup> As in our main report, we have also undertaken a Dimson correction and have tested for a ask-bid spread liquidity (see Table A1 in the Annex). For each of the Americas the median of the new comparators is obtained (Table A2).

We have then populated additional companies in our median tables.

- For the North America this implied adding three medians, one for each of the sectors “Fossil”, “Hydro” and “Other”.
- For Latin America we included the hydroelectrical comparator suggested by ContourGlobal (“Compania Energetica Sao Paulo”) and two times the median for “Fossil” asset betas (this is to keep a balance of 2 and 2 for “Hydro” and “Fossil”).
- Region Europe contained 5 comparators so was left unchanged.

The results are shown in Table I below, where column “Sector” denotes the main sector of the comparators used (“Fossil”, “Hydro” or “Other”), and “Region” denotes the geographical region (“A” for North America, “E” for Europe and “L” for Latin America). “Comparators 0” shows the original list of comparators which produce a median of 0.46 (as in our report). “Comparators 1” shows the list of comparators with different medians for the additional “Hydro” and “Fossil” sectors. This produces a median of 0.46.

We noted that there are no comparators in the “Other” sector for Latin America, as an additional test we have added a column of “Comparators 2” which include, in addition to the companies in “Comparators 1”, one additional observation which has been calculated as the median of values used in the “Other” sector in North America and Europe. This median is equal to 0.46 and therefore has no effect on the overall median calculated for “Comparators 2”.

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<sup>1</sup> This companies were initially discarded as comparators because they differed significantly in terms of the production activities of the regulated company.

**Table I Sensitivity Analysis**

Name	Sector	Region	Comparators 0	Comparators 1	Comparators 2
<b>Clearway Energy Inc</b>	Fossil	A	0.39	0.39	0.39
<b>Pattern Energy Group Inc</b>	Other	A	0.62	0.62	0.62
<b>Median 1</b>	Fossil	A		0.20	0.20
<b>Median 2</b>	Hydro	A		0.18	0.18
<b>Median 3</b>	Other	A		0.19	0.19
<b>Zespol Elektrowni Patnow Adamow Konin SA</b>	Fossil	E	0.29	0.29	0.29
<b>Eolus Vind AB (publ)</b>	Other	E	0.55	0.55	0.55
<b>Albioma SA</b>	Other	E	0.36	0.36	0.36
<b>Falck Renewables SpA</b>	Other	E	0.42	0.42	0.42
<b>EDP Renovaveis SA</b>	Other	E	0.51	0.51	0.51
<b>Engie Brasil Energia SA</b>	Hydro	L	0.49	0.49	0.49
<b>Compania Energetica Sao Paulo*</b>	Hydro	L		0.75	0.75
<b>Median 4</b>	Fossil	L		0.83	0.83
<b>Median 5</b>	Fossil	L		0.83	0.83
<b>Median 6</b>	Other	L			0.46
<b>Median of the Comparators</b>			<b>0.46</b>	<b>0.46</b>	<b>0.46</b>

Note: \* We are using our estimation of asset beta for Compania Energetica Sao Paulo of 0.75. When using the value reported by ContourGlobal of 0.62 the results are unchanged (this is due to the robustness property of the median). Median 1 reflects the median of asset betas for “Fossil” companies in North America. Median 2 reflects the median of “Hydro” companies. Median 3 reflects the median of “Other” companies. Median 4 and 5 reflect the median of “Hydro” companies in Latin America. Median 6 reflects an estimated median for “Other” companies in Latin America based on the values used for this sector in North America and Europe.

In conclusion, we believe that there is no reason for inclusion of additional peers, but if this is contemplated it should be done in a way that maintains the energy balance amongst the comparators. We have shown that if this is done the median of the asset betas does not change.

## 2 Annex

**Table A.1 Additional Beta's**

Name	Operations	Region	A_beta [O]	A_beta [D]	A_Beta
Central Puerto SA	Fossil	L	0.77	1.02*	<b>1.02</b>
Engie Energia Chile SA	Fossil	L	0.63	0.69	<b>0.63</b>
MGE Energy Inc	Fossil	A	0.36	0.20*	<b>0.20</b>
OGE Energy Corp	Fossil	A	0.43	0.36	<b>0.43</b>
Dominion Energy Inc	Fossil	A	0.20	0.16	<b>0.20</b>
Otter Tail Corp	Fossil	A	0.38	0.33	<b>0.38</b>
Entergy Corp	Fossil	A	0.14	0.08	<b>0.14</b>
Avangrid Inc	Fossil	A	0.16	0.16	<b>0.16</b>
Companhia Paranaense de Energia	Hydro	L	0.68	0.72	<b>0.68</b>
Centrais Eletricas Brasileiras SA	Hydro	L	0.64	0.75	<b>0.64</b>
CESP Companhia Energetica de Sao Paulo	Hydro	L	0.75	0.75	<b>0.75</b>
AES Tiete Energia SA	Hydro	L	0.38	0.44	<b>0.38</b>
American Electric Power Company Inc	Hydro	A	0.14	0.09	<b>0.14</b>
Hawaiian Electric Industries Inc	Hydro	A	0.11	0.07	<b>0.11</b>
Idacorp Inc	Hydro	A	0.23	0.22	<b>0.23</b>
Xcel Energy Inc	Hydro	A	0.15	0.09	<b>0.15</b>
Duke Energy Corp	Hydro	A	0.19	0.14	<b>0.19</b>
Public Service Enterprise Group Inc	Hydro	A	0.19	0.15	<b>0.19</b>
Southern Co	Hydro	A	0.13	0.10	<b>0.13</b>
WEC Energy Group Inc	Hydro	A	0.26	0.19	<b>0.26</b>
NRG Energy Inc	Hydro	A	0.09	0.09	<b>0.09</b>
Portland General Electric Co	Hydro	A	0.16	0.14	<b>0.16</b>
Avista Corp	Hydro	A	0.27	0.20	<b>0.27</b>
Ameren Corp	Hydro	A	0.57	0.55	<b>0.57</b>
Pinnacle West Capital Corp	Other	A	0.19	0.13	<b>0.19</b>
PNM Resources Inc	Other	A	0.13	0.09	<b>0.13</b>
Alliant Energy Corp	Other	A	0.18	0.17	<b>0.18</b>
Ormat Technologies Inc	Other	A	0.21	0.13	<b>0.21</b>
CMS Energy Corp	Other	A	0.69	0.50*	<b>0.50</b>

Note: \* OLS asset betas where Dimson correction was found to be statistically significant for the firm.

**Table A.2 Median Asset beta**

Sector	Region	Median
Fossil	L	0.83
Fossil	A	0.20
Hydro	L	0.66
Hydro	A	0.18
Other	L	
Other	A	0.19