

# *Pioneer Energy*

Independent review of the potential impact of proposed regulatory changes on distributed (electricity) generators

*Strictly private  
and confidential*

*20 July 2016*

## *Important notice*

Any person other than our client for this report (Pioneer Energy Limited) or who has not signed and returned to us a Release Letter or Hold Harmless Letter accepts and agrees to the following terms:

- The reader of this report understands that our work was performed in accordance with instructions provided by our client and was performed exclusively for our client's sole benefit and use.
- The reader of this report acknowledges that we owe a duty of care to our client only and that this report was prepared at the direction of our client and may not include all procedures deemed necessary for the purposes of the reader.
- The reader agrees that PricewaterhouseCoopers, its partners, principals, employees and agents neither owe nor accept any duty or responsibility or care to it, whether in contract or in tort (including without limitation, negligence and breach of statutory duty), and shall not be liable for any loss, damage or expense of whatsoever nature that is caused by any use the reader may choose to make of this report, or which is otherwise consequent upon the gaining of access to the report by the reader.
- The reader agrees that this report is not to be referred to or quoted, in whole or in part, in any prospectus, registration statement, offering circular, public filing, loan, other agreement or document and not to distribute the report without our prior written consent.

This report has been prepared solely for the purposes stated herein and should not be relied upon for any other purpose.

This report is strictly confidential and (save to the extent required by applicable law and/or regulation) must not be released to any third party without our express written consent which is at our sole discretion.

We have not independently verified the accuracy of information provided to us, and have not conducted any form of audit in respect of the distributed generators for the purpose of this report. Accordingly, we express no opinion on the reliability, accuracy, or completeness of the information provided to us and upon which we have relied.

The statements and opinions expressed herein have been made in good faith, and on the basis that all information relied upon is true and accurate in all material respects, and not misleading by reason of omission or otherwise.

The statements and opinions expressed in this report are based on information available as at the date of the report.

We reserve the right, but will be under no obligation, to review or amend our report, if any additional information, which was in existence on the date of this report was not brought to our attention, or subsequently comes to light.

This report is issued pursuant to the terms and conditions set out in our engagement letter with Pioneer Energy Limited and the Terms of Business attached thereto.

# *Contents*

Introduction	4
Methodology and assumptions	7
ACOT revenue analysis	9
Common costs analysis	17
Summary	25

# *Introduction*

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## *Introduction*

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### **Background**

- There is a large number of small scale electricity power schemes throughout New Zealand. These are commonly referred to as distributed generators (DGs). The schemes:
  - Are generally connected to an electricity distribution network.
  - Are primarily commercially focussed, selling output through some form of power purchase agreement and on the spot market as price takers.
  - Have fuel sources that are predominately renewable, such as water, wind, biogas and wood waste.
- An important component of the DGs annual revenue is Avoided Cost of Transmission (ACOT) payments that they receive from electricity network companies. Total ACOT payments received by all DGs in 2015 was approximately \$52 million.
- The Independent Electricity Generators Association (the IEGA) represents approximately 35 owners/operators of DGs. The IEGA is not a constituted organisation or entity in its own right.
- The Electricity Authority (the Authority) is considering making changes to the methodology for setting transmission prices under Part 12 of the Electricity Industry Participation Code 2010 (Code). The Authority is also considering making changes to distributed generation pricing principles in Schedule 6.4 of the Code.
- The Authority has signalled that the consequences of its proposed changes will include:
  - A significant reduction and/or elimination in the annual ACOT payments to the DGs.
  - DGs potentially having to pay “common costs’ to electricity network companies.
- The IEGA has signalled that the Authority’s proposed changes could result in closure of plants and reduce security of supply.
- The IEGA and/or its members are making a submission on the Authority’s proposed changes to Part 12 and Schedule 6.4. Pioneer Energy Ltd (Pioneer Energy) is managing the development of the submission to the Authority on behalf of the IEGA.

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## *Introduction*

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### **Scope**

- We have been engaged by Pioneer Energy on behalf of a group of IEGA members to prepare a brief report on the financial impacts on DGs of the potential elimination of ACOT revenue and the potential payment of “common costs” to electricity network companies.
- The scope of our work and the associated terms and conditions are set out in our engagement letter with Pioneer Energy dated 30 May 2016 and our scope extension letter dated 13 July 2016.
- Our analysis, which is presented in this report, is to be included with the IEGA’s submission to the Electricity Authority, which is due on the 26 July 2016.
- The first section of this report sets out the methodology and assumptions used to analyse the impact on DGs of the elimination of ACOT revenue and the payment of common costs. The second section sets out the analysis of the impact of the elimination of ACOT revenue. The third section sets out the combined impact of the elimination of ACOT revenue and the payment of common costs by DGs. The final section summarises our findings.
- The sources of information we have used to undertake our analysis include:
  - DG annual financial statements and/or specific financial information for the last three financial years.
  - Pioneer Energy’s analysis of Commerce Commission electricity distribution business information disclosures.
  - Our internal analysis of industry benchmarks.
- Ten DGs have participated in the analysis. However, some DGs are not included in certain sections of the analysis because of information limitations.
- DG information has been anonymised. The averages and totals in the figures that follow are the average of three years of historical data.

# *Methodology and assumptions*

## ***Methodology and assumptions***

### **Methodology – ACOT**

- We have undertaken the following procedures to analyse the impact of eliminating ACOT revenue:
  - Compiled the DG's financial statements for the last three financial years (where available).
  - Obtained data on annual ACOT revenue received and other information from each DG for the last three financial years.
  - Calculated financial measures to demonstrate the impact on revenue, profitability, gearing, interest cover, liquidity and value of the elimination of ACOT revenue.

### **Methodology – ACOT and common costs**

- Our analysis of the combined impact of eliminating ACOT revenue and DGs paying common costs has involved taking the information from step 3 above (including estimated payments for common costs) and then calculating financial measures before and after the elimination of ACOT revenue and the payment of common costs to demonstrate the impact on operating expenses, profitability, gearing, interest cover, liquidity and value.

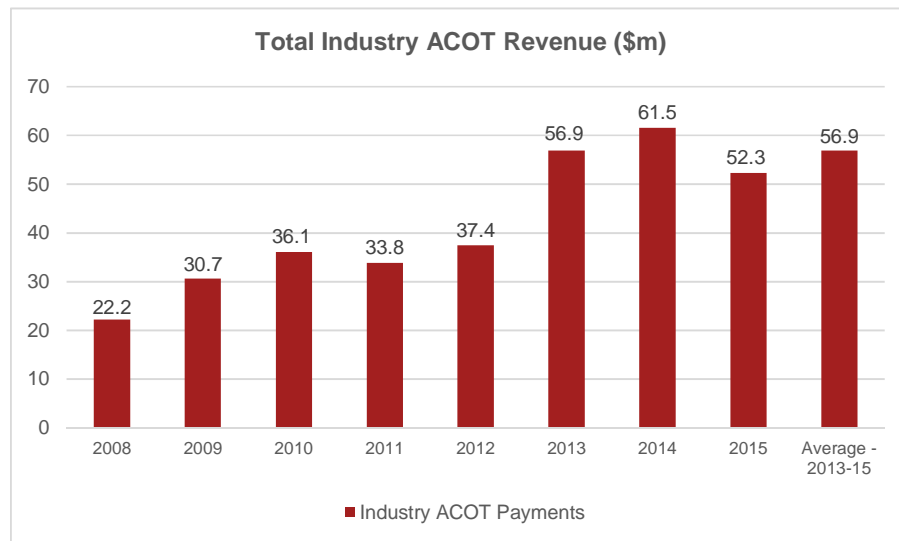
### **Assumptions**

- We have made the following assumptions to facilitate our analysis:
  - Elimination of ACOT revenue and payment of common costs are the only adjustments that need to be made to the historical financial statements information. Elimination of ACOT revenue and payment of common costs will not have an impact on, and so not require adjustments to other revenue or operating and financing costs.
  - All ACOT revenue will be eliminated. There will not be any re-negotiation of ACOT payments subsequent to any proposals being implemented.
  - Common cost payments will be in the range of \$20 and \$40 per MWh. The common costs are a range of indicative costs provided to IEGA members on an informal basis due to the restricted timeframes. We understand that these costs are similar to standard commercial tariffs as suggested by the EA proposal for standard consumers.
  - Where a DG has multiple revenue streams (e.g. retail), it is appropriate to undertake the analysis on the profit and loss and balance sheet of the DG's generation assets only. In some cases this has involved making simplifying assumptions to separate generation assets from the rest of the business, for example pro-rating the level of total debt allocated to generation assets.
  - The analysis has been conducted on a cumulative basis (e.g. the impact of the elimination of ACOT revenue on the balance sheet accumulates over time).



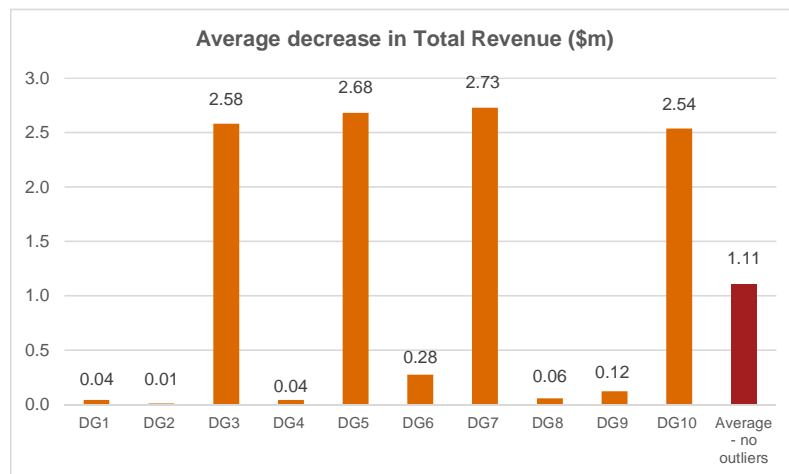
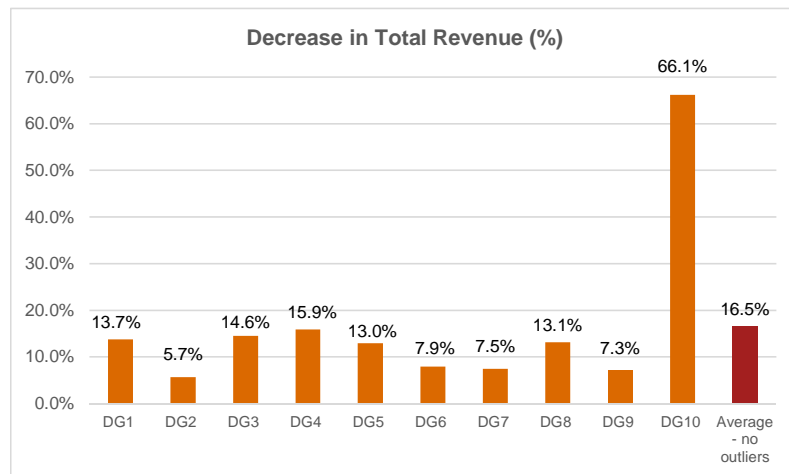
# *ACOT revenue analysis*

## Total industry impact



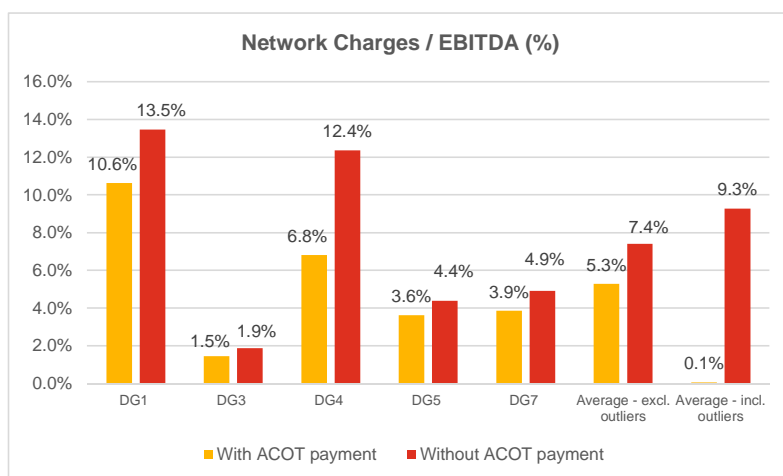
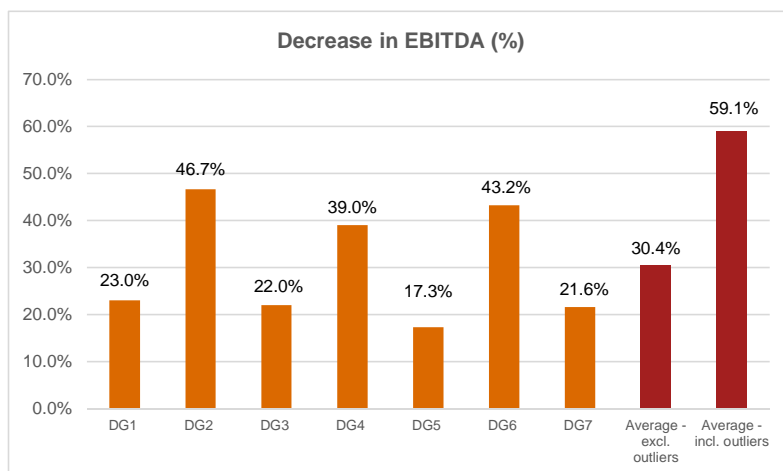
- Total industry ACOT revenue (the total of all ACOT payments made by the electricity network companies to the DGs) is presented in the figure opposite.
- Total industry ACOT revenue has:
  - Ranged from a low of \$22.2 million in 2008 to \$61.5m in 2014.
  - Averaged \$41.4 million over the period 2008 to 2015.
- The average annual ACOT payments in the last three financial years made to DGs included in the analysis in this report is \$11.1m. This is approximately 20% of the annual average total industry ACOT payments from 2013 to 2015 of \$56.9m.
- The indicative total industry value impact of DGs losing ACOT revenue is approximately \$540 million assuming an industry WACC of 7.6%. This impact has been calculated using the average of total industry ACOT revenue (after tax) made over the last 3 years.

## Revenue



- The loss of ACOT revenue results in an average 16.5%, or a \$1.1 million, decrease per annum in total revenue for the ten DGs included in our analysis.
- For one DG (DG10) the loss of ACOT revenue could potentially result in an average loss per annum of up to 66.1% of total revenue. DG10 is an outlier in terms of the percentage decrease in total revenue.
- In subsequent figures we have excluded individual outliers to make the figures more meaningful. For example, only DGs with positive EBITDA in all scenarios are included in the Net Debt / EBITDA figure on page 22. However, we have included averages with and without outliers in the figures and commentary to provide readers with a balanced view of the results.
- The average decrease in total revenue demonstrates that there is a wide range in the level of ACOT revenue received by the ten DGs who provided information for our analysis. This partially reflects considerable differences in the size of the DGs. For example, revenue varies from approximately \$0.2 to \$36.1 million per annum and generation volume varies from 2,135 to 224,168 in MWh per annum.

## Profitability



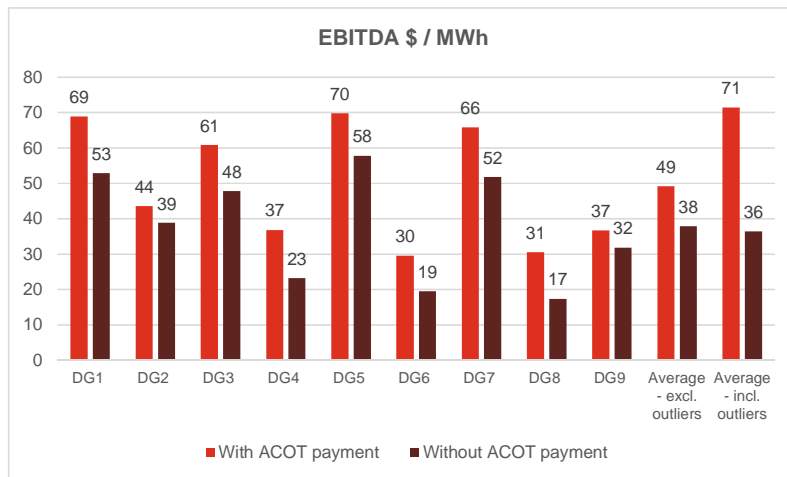
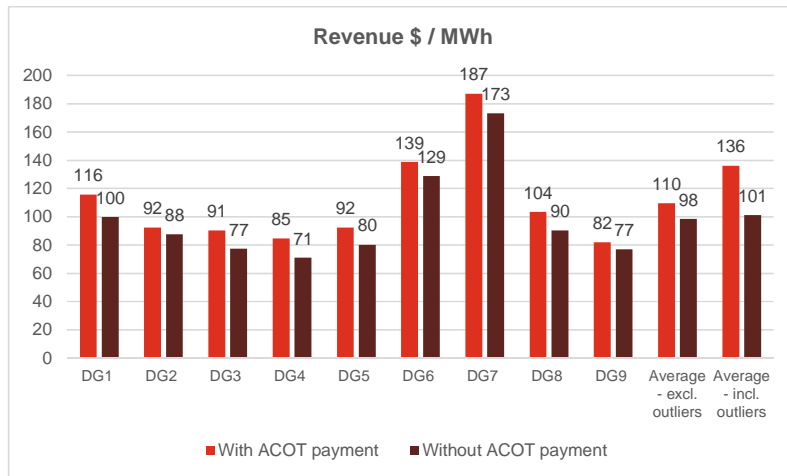
### Decrease in EBITDA (%)

- The percentage decrease in EBITDA demonstrates the impact on profitability of the elimination of ACOT revenue. There are no costs associated with ACOT revenue and so the elimination of ACOT falls straight to EBITDA.
- We have not analysed the percentage change in EBIT due to the DGs' differing depreciation policies.
- The elimination of ACOT revenue results in a significant decrease in profitability for DGs. The average decrease in EBITDA is 30.4% excluding outliers and 59.1% including outliers.
- For some DGs, the elimination of ACOT revenue changes average annual EBITDA from positive to negative. This emphasises the significance of DGs losing ACOT revenue.

### Network Charges / EBITDA (%)

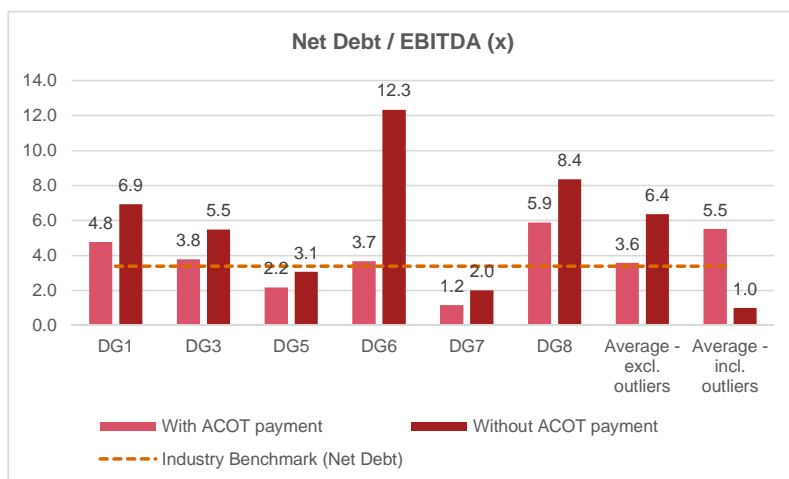
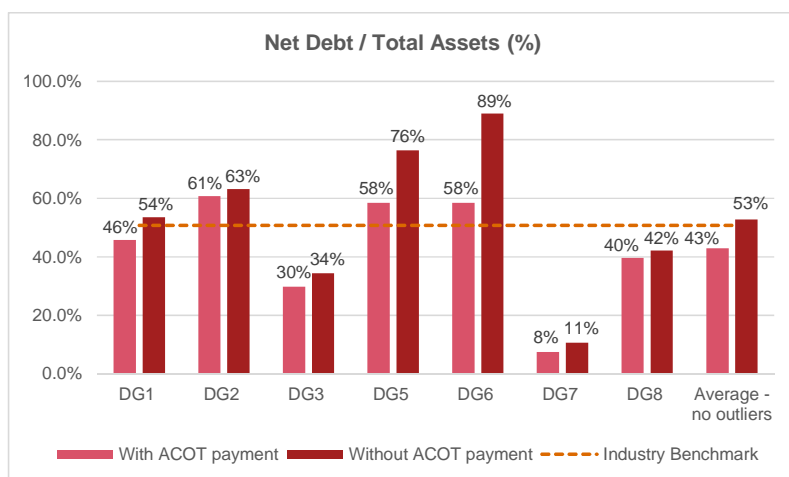
- Network charges are negotiated bi-laterally between electricity network companies and individual DGs. This means there are significant differences in network charges between the DGs, reflecting their individual circumstances such as geographical location.
- Network charges measured as a percentage of EBITDA increases for all DGs after the elimination of ACOT revenue (excluding DGs with negative EBITDA where the measure is not meaningful).
- The average network charges / EBITDA ratio:
  - Excluding outliers increases from 5.3% to 7.4%.
  - Including outliers increases from (0.1%) to 9.3%.

## *\$/MWh metrics*



- Revenue and profitability per unit of output will decrease with the elimination of ACOT revenue. On average DGs will lose approximately:
  - \$12 of revenue and EBITDA per MWh generated excluding outliers.
  - \$35 of revenue and EBITDA per MWh generated including outliers.

## Gearing



- Gearing is a measure of financial leverage, demonstrating the degree to which a business' activities are funded by debt.
- We have calculated two gearing measures – net debt to total assets and net debt to EBITDA. Net debt is total debt less cash and cash equivalents.

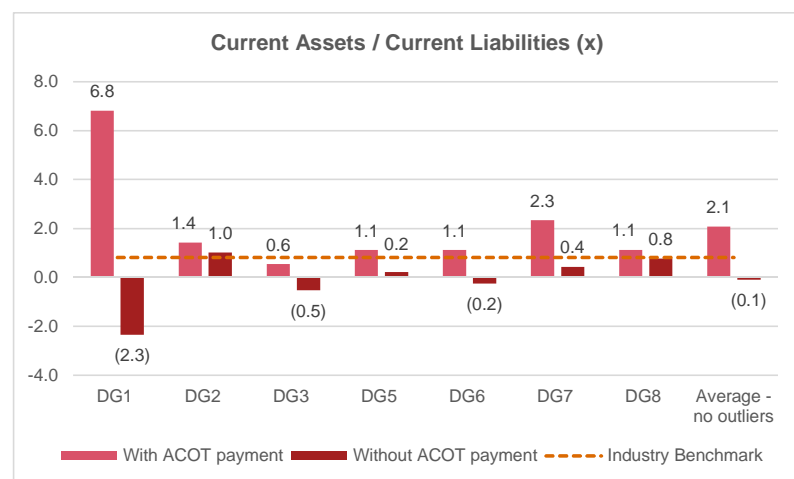
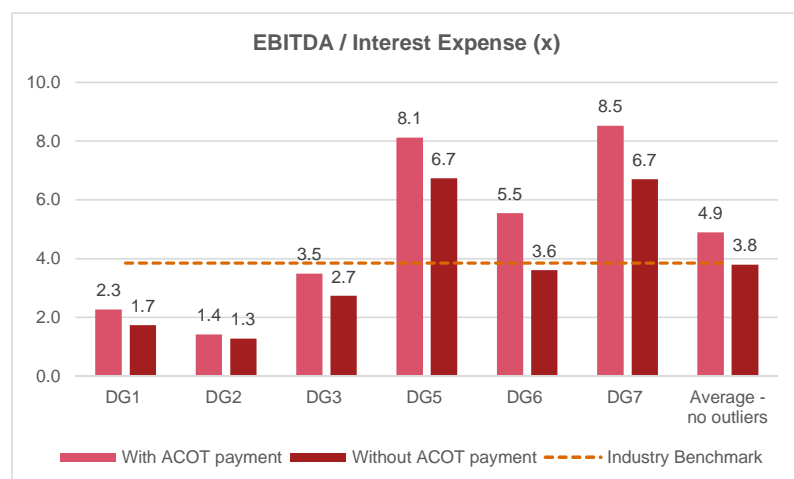
### Net Debt / Total Assets (%)

- Elimination of ACOT revenue reduces DG's free cash flow. Assuming no change in distributions to shareholders, lower free cash flow will reduce retained earnings and therefore increase the proportion of debt in a DG's capital structure. Consequently, elimination of ACOT increases the average net debt / total assets ratio from 43% to 53% for the participating DGs.
- The estimated average percentage total debt/assets ratio for eleven New Zealand energy companies was 50.8% in 2015. This industry benchmark includes large energy companies with higher credit ratings and more diversified businesses compared to the DGs.

### Net Debt / EBITDA (x)

- Lower EBITDA also increases the ratio of net debt / EBITDA for all DGs (excluding DGs with negative EBITDA where the measure is not meaningful).
- The elimination of ACOT revenue increases the net debt / EBITDA ratio from 3.6x to 6.4x excluding outliers. The average including outliers decreased from 5.5x to 1.0x due to one DG incurring a particularly large EBITDA loss in one of the years included.
- The estimated average net debt to EBITDA ratio for the eleven New Zealand energy companies was 3.4x in 2015.

## Interest cover & liquidity



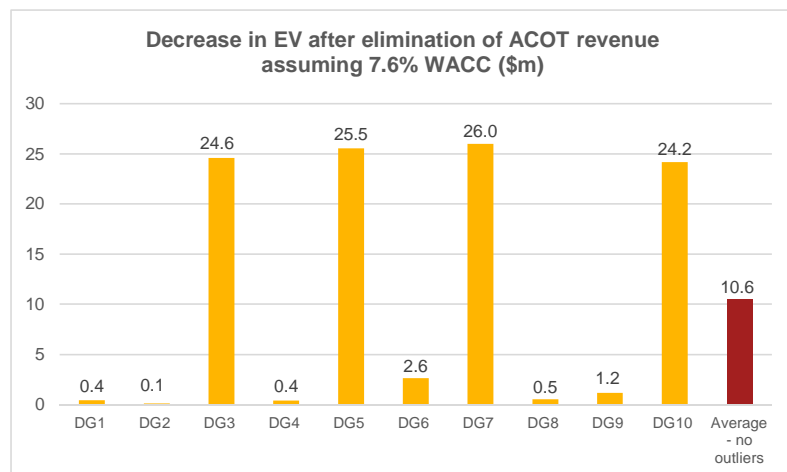
### EBITDA / Interest Expense (x)

- The EBITDA / interest expense ratio measures interest cover. It provides an indication of a business' ability to meet its interest commitments. If ACOT is eliminated DGs will suffer a reduction in EBITDA and a decrease in interest cover. In calculating this ratio we have assumed no change in interest expense.
- The average EBITDA / interest expense ratio decreases from 4.9x with ACOT revenue to 3.8x without ACOT revenue.
- The estimated average EBITDA / interest expense ratio for the eleven New Zealand energy companies was 3.9x in 2015.

### Current Assets / Current Liabilities (x)

- The current assets / current liability ratio (current ratio) is a measure of a business' ability to meet short-term obligations.
- To calculate this ratio, we have assumed the elimination of ACOT revenue reduces cash in the DGs' balance sheets. This in turn reduces current assets, and consequently the current ratio.
- The average current assets / current liabilities ratio decreases from 2.1x with ACOT revenue to (0.1x) without ACOT revenue. This means DGs are noticeably less liquid without ACOT revenue and a number have negative ratios.
- The estimated average current assets / current liabilities ratio for eleven New Zealand energy companies was 0.8x in 2015.

## Indicative value impact



- The indicative enterprise value (EV) impact of the elimination of ACOT has been calculated for each DG. The calculation is high level and has involved estimating the present value of after tax ACOT revenue using an industry weighted average cost of capital (WACC) of 7.6%.
- The average reduction in EV assuming the loss of ACOT revenue across the DGs is \$10.6 million.
- The total indicative value impact on all DGs who participated in the analysis is \$106 million. This is approximately 20% of the estimated total industry value impact of \$540 million referred to earlier.
- The variance in the estimated loss in EV across the DGs largely reflects differences in size.



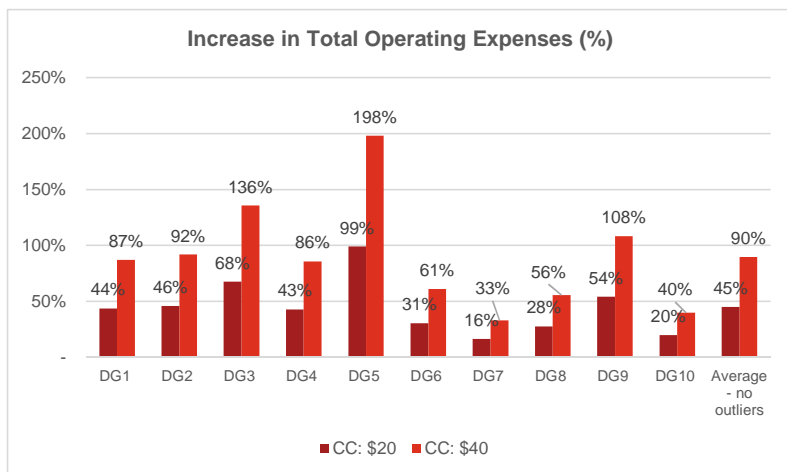
# *Common costs analysis*

## *Introduction*

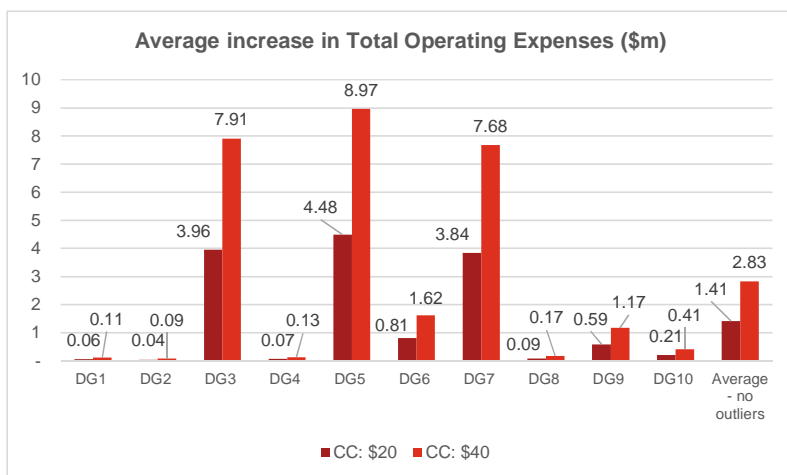
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- This section contains analysis of the combined impact of eliminating ACOT revenue and DGs paying common costs across a range of measures including operating expenses, profitability, gearing and value.
- The common costs analysis uses the same measures as the ACOT revenue analysis to enable a comparison between the two analyses (where possible). In some figures we have also included the ACOT revenue analysis to show the impact of DGs also having to pay common costs.
- We have used two estimates of potential common costs payment assumptions provided to us by Pioneer Energy: \$20 and \$40 per MWh. Pioneer Energy requested that we undertake our analysis of the impact of the potential payment of common costs in combination with the elimination of ACOT revenue, rather than analysing the impact on DGs of just paying common costs and assuming that ACOT revenue remains.
- We understand further work is required to better understand the potential quantum of common costs for DGs. Consequently, the analysis in this report is indicative only

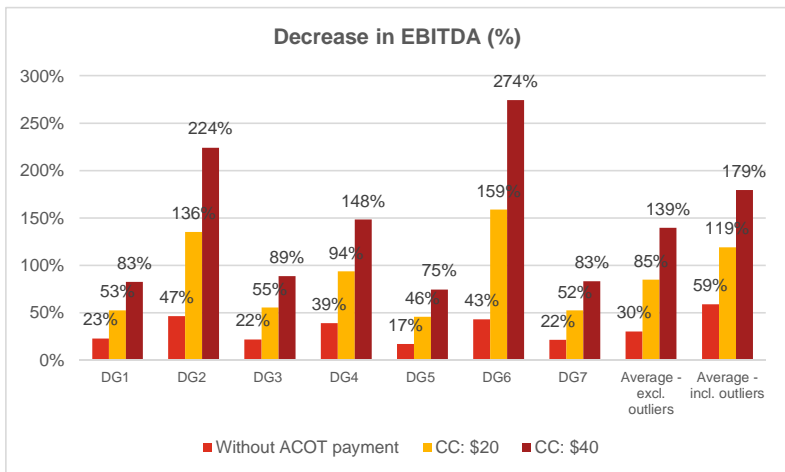
## Operating expenses



- Changes in operating expenses are used to demonstrate the percentage and absolute impacts of DGs paying common costs to electricity network companies.
- The payment of common costs results in significant increases in average total operating expenses of 45% and 90%, or \$1.4 million and \$2.8 million, assuming common cost payments of \$20 and \$40 MWh respectively.
- The average increase shows the wide range of potential costs payable by the ten DGs who participated in this analysis.

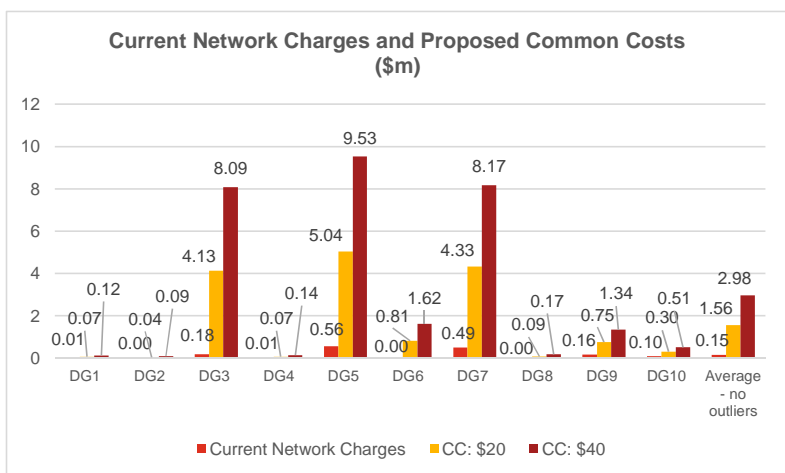


# Profitability



## Decrease in EBITDA (%)

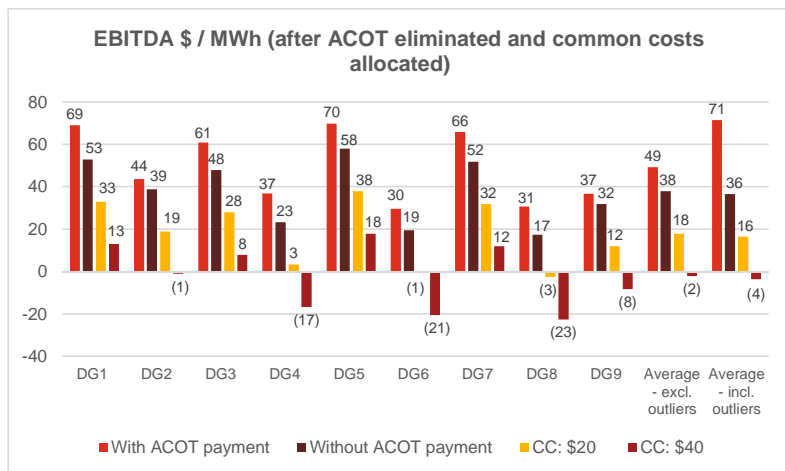
- The combined impact of losing ACOT revenue and paying common costs results in a very significant decrease in profitability for DGs.
- The average decrease in EBITDA is:
  - 85% and 139% assuming common costs of \$20 and \$40 per MWh and excluding outliers.
  - 119% and 179% assuming common costs of \$20 and \$40 per MWh and including outliers.



## Current Network Charges and Proposed Common Costs (\$m)

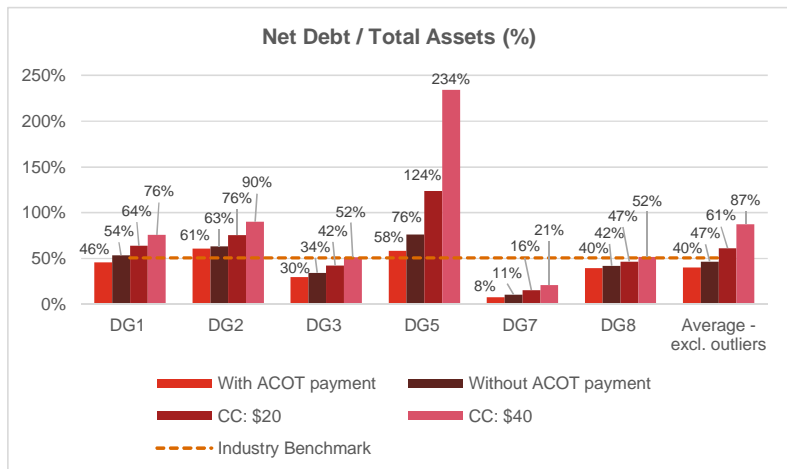
- DGs' total network costs increase significantly if the common cost payments of \$20 per MWh and \$40 per MWh are assumed to be in addition to existing network charges.

## \$ MWh metrics



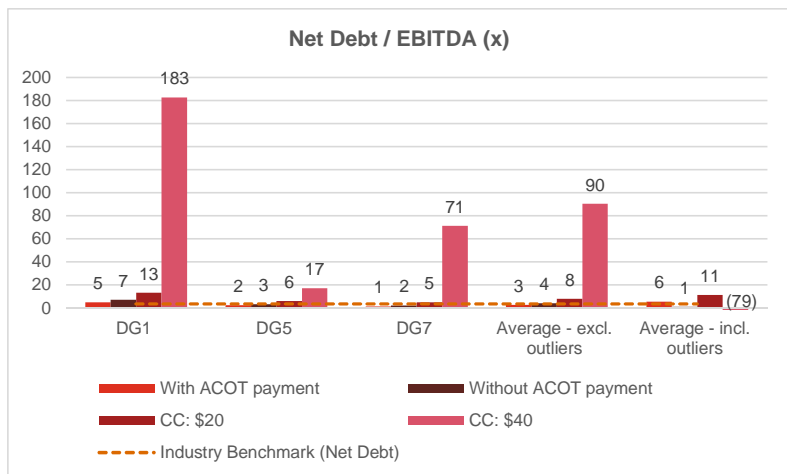
- The figure opposite presents the cumulative impact on EBITDA / MWh of losing ACOT revenue and paying common costs of \$20 and \$40 per MWh.
- For some DGs, the EBITDA / MWh ratio goes from positive to negative. This demonstrates the significance of DGs having to pay common costs in addition to losing ACOT revenue.

# Gearing



## Net Debt / Total Assets (%)

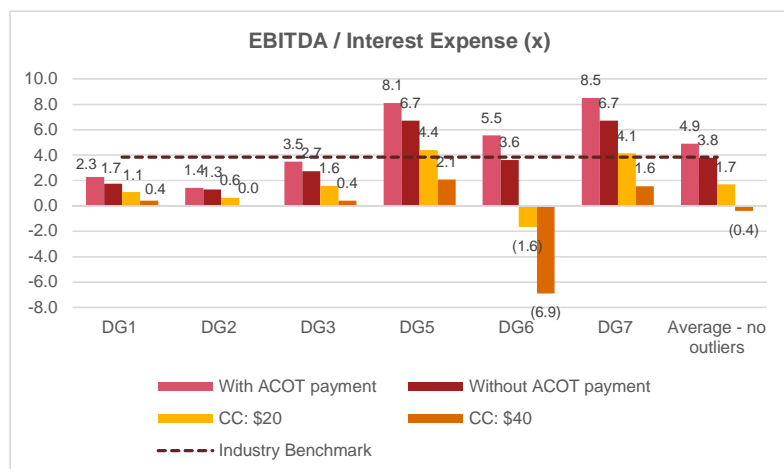
- The combined impact of eliminating ACOT revenue and DGs paying common costs increases the average net debt / total assets ratio to 61% and 87% excluding outliers and assuming common costs of \$20 and \$40 per MWh respectively.
- This will result in gearing levels for a number of the DGs that will be difficult to sustain.



## Net Debt / EBITDA (x)

- The combined impact of eliminating ACOT revenue and DGs paying common costs increases the net debt / EBITDA ratio to 8x and 90x excluding outliers and assuming common costs of \$20 and \$40 per MWh respectively. This ratio also demonstrate the significance of DGs having to pay common costs in addition to losing ACOT revenue.

## Interest cover & liquidity

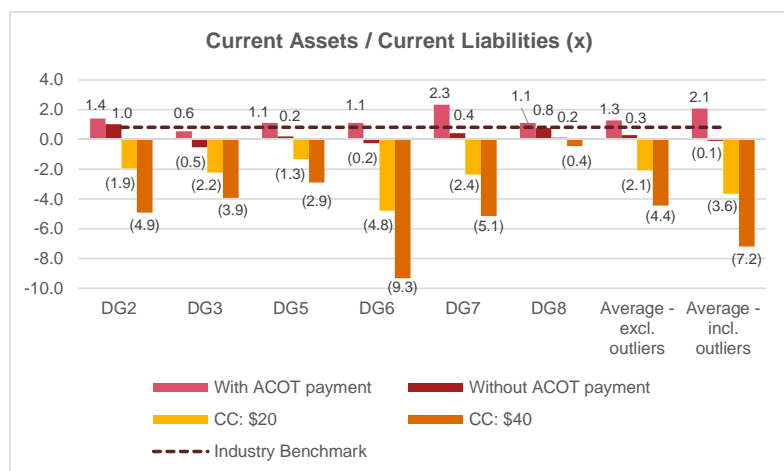


### EBITDA / Interest Expense (x)

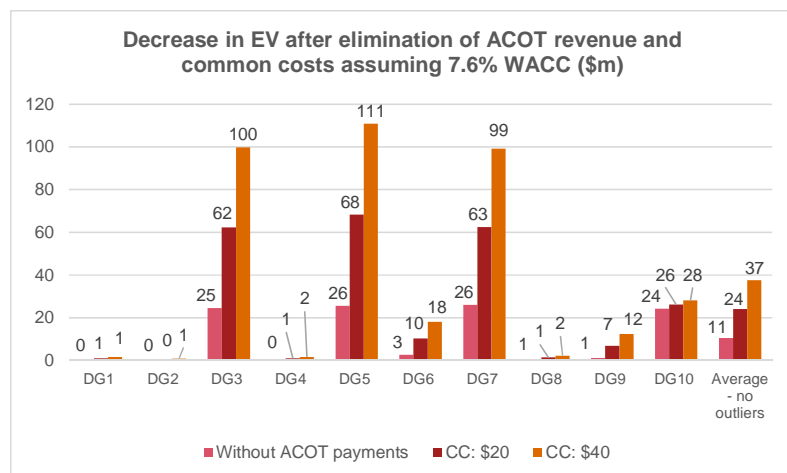
- DGs' interest cover deteriorates significantly as a result of having to pay common costs in addition to losing ACOT revenue. The average EBITDA / interest expense ratio decreases to 1.7x and (0.4x) without ACOT revenue and assuming common costs of \$20 and \$40 per MWh respectively.

### Current Assets / Current Liabilities (x)

- The average current assets / current liabilities ratio including outliers decreases to (3.6x) and (7.2x) without ACOT revenue and assuming common costs of \$20 and \$40 per MWh respectively. This means that for many DGs current liabilities will exceed current assets.



## Indicative value impact



- The average indicative loss in EV for each DG is:
  - \$24 million after elimination of ACOT revenue and assuming \$20 per MWh of common costs.
  - \$37 million after elimination of ACOT revenue and assuming \$40 per MWh of common costs.
- The total indicative value impact for all DGs (who participated in this analysis) is:
  - \$240 million after elimination of ACOT revenue and assuming \$20 per MWh of common costs.
  - \$374 million after elimination of ACOT revenue and assuming \$40 per MWh of common costs.



# *Summary*

## Summary

- The average annual ACOT payments in the last three financial years made to DGs included in the analysis in this report is \$11.1 million. This is approximately 20% of the annual average total industry ACOT payments from 2013 to 2015 of \$56.9 million.
  - The financial information provided to us by the DGs included in our analysis suggests that most operate profitably and have prudent levels of financial gearing compared to wider industry benchmarks.
  - Eliminating ACOT revenue from the DGs financial statements for the 2013 -2015 financial years results in an average reduction in EBITDA of 30.4% and an average increase in net debt / EBITDA ratio from 3.6x to 6.4x (excluding outliers).
  - If ACOT revenue is eliminated and DGs are also required to pay network common costs at a level of \$20 per MWh then the EBITDA of the DGs in our analysis reduces on average by 85% and net debt/EBITDA increases on average to 8x. If network common costs are assumed to be \$40 per MWh then the average decrease in EBITDA and increase in net debt /EBITDA is considerably larger.
  - The elimination of ACOT revenue could result in a reduction in enterprise value for the DGs in our analysis of approximately \$106 million. The value reduction could be up to approximately \$374 million if the DGs in the analysis lose ACOT revenue and are also required to pay network common costs at \$40 per MWh.
- The revenue of the DGs in our analysis is approximately 20% of total DG sector revenues. If the impact on value of eliminating ACOT revenue and paying network common costs on the DGs in our analysis is representative of these changes on the sector as a whole, then the total sector value impacts could be between \$0.5 billion and \$1.5 billion or possibly more.