

PACIFIC POWER UTILITIES

Benchmarking Summary Report

2016 Fiscal Year

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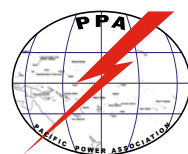
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Benchmarking

Summary Report

2016 Fiscal Year

PREPARED BY THE PACIFIC POWER ASSOCIATION (PPA)

JANUARY 2018

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EXECUTIVE SUMMARY

Overview

Benchmarking is recognised as a valuable instrument for comparing performance within and between organisations and across regions. It allows better understanding of performance gaps, fosters improved decision-making about priorities and use of available resources, and can result in increased efficiency and effectiveness. Key Performance Indicators (KPIs) are being used in the Pacific Power Association as the basis for utilities to monitor, assess and improve their performance over time by identifying areas of weakness and addressing them, and by comparing performance with other utilities and learning from them about aspects of their operation that produce stronger performance. Benchmarking liaison officers of each participating utilities annually use 46 key performance indicators to rank their utility performance with other similar size power utilities in the region.

In the 2016 Fiscal Year, 18 utilities took part in the annual Pacific Power Utilities benchmarking exercise. Similar to 2015, PPA through World Bank funded Sustainable Energy Industry Development Project (SEIDP) engaged services of an electrical engineer to provide assistance in vetting and the analysis of the utility data as well as preparing the 2016 Fiscal Year Benchmarking Summary Report. Each year the Secretariat faces various challenges when collecting data and preparing the benchmarking report. One of the major challenge this year was incomplete benchmarking questionnaires being submitted. It was also noticed that there were irregularities in data and in few cases inconsistency in the set of data provided. Due to data irregularities more time was spent liaising with utility officers to retrieve correct data. This round of benchmarking presents only a summary of the indicators with no analysis in line with PPA Board's resolution at the Board Meeting held in Koror, Palau, on July 16, 2013.

All financial data has been fully disclosed in line with the PPA Board resolution at the PPA Annual Conference held in Tahiti, French Polynesia on 8 July 2014 and this continues the trend from the 2014/2015 Fiscal Year Benchmarking Report. The Governance and Data Reliability indicators have not changed significantly from previous benchmarking period. This is expected as there has been no noted major changes in ownership, regulation and governing standards to impact on the indicators. The percentage of females in utilities has slightly decreased from the previous benchmarking period and standards at 19.2% of the total workforce. This is quite the opposite in the case for females employed in technical positions, there has been marginal increase in the number of female staff in 2016 increasing from 4% in 2015 to 4.7% in 2016. Technical KPIs for 2016 FY are been displayed graphical in this report together with 2014 and 2015 data for comparison purpose.

1. INTRODUCTION

1.1 Benchmarking Overview

The 2016 exercise involves data from 18 power utilities compared to 23 for the 2015 Fiscal Year.

Table 1.1 shows the utilities that have participated in the Pacific benchmarking initiative since 2001. This round of benchmarking covered data governance, gender composition of the workforce, and KPI operational and performance data KPIs.

Table 1.1: Utility Participation in Benchmarking 2001, and 2010 - 2016 Data Periods

Utility			Data Period							
			2001	2010	2011	2012	2013	2014	2015	2016
Acronym	Name	Country / Territory	Year Data Collated							
			2002	2011	2012/13	2013/14	2015	2015	2016	2017
ASPA	American Samoa Power Authority	American Samoa	✓	✓	✓	✓	✓	✓	✓	✓
CPUC	Chuuk Public Utility Corporation	Fed States of Micronesia (FSM)	✓	✓	✓	✓	✓	✓	✓	✓
CUC	Commonwealth Utilities Corporation	Commonwealth of N Marianas	✗	✓	✓	✓	✓	✗	✓	✗
EDT	Electricité de Tahiti	French Polynesia	✓	✓	✓	✓	✓	✓	✓	✓
EEC	Electricité et Eau de Caledonie	New Caledonia	✓	✗	✗	✓	✓	✓	✓	✓
EEWF	Electricité et Eau de Wallis et Futuna	Wallis & Futuna	✓	✗	✗	✗	✗	✗	✗	✗
ENERCAL	Societe Neo-Caledonenne D'Energie	New Caledonia	✓	✗	✗	✗	✗	✗	✗	✗
EPC	Electric Power Corporation	Samoa	✓	✓	✓	✓	✓	✓	✓	✗
FEA	Fiji Electricity Authority	Fiji	✓	✓	✓	✓	✓	✓	✓	✓
GPA	Guam Power Authority	Guam	✓	✓	✓	✓	✓	✓	✓	✓
HECO	Hawaii Electric Company	Hawaii, (USA)	✗	✗	✗	✗	✓	✓	✓	✗
KAJUR	Kwajalein Atoll Joint Utility Resources	Marshall Islands (RMI)	✓	✓	✓	✓	✓	✓	✓	✓
KUA	Kosrae Utilities Authority	Fed States of Micronesia (FSM)	✓	✓	✓	✓	✓	✓	✓	✓
MEC	Marshall Energy Company	Marshall Islands (RMI)	✗	✓	✓	✓	✓	✓	✓	✓
NPC	Niue Power Corporation	Niue	✓	✓	✗	✗	✗	✗	✓	✗
NUC	Nauru Utilities Corporation	Nauru	✗	✓	✓	✓	✗	✗	✓	✓
PPL	PNG Power Ltd.	Papua New Guinea (PNG)	✓	✓	✓	✗	✓	✓	✓	✗
PPUC	Palau Public Utilities Corporation	Palau	✓	✓	✓	✓	✓	✓	✓	✓
PUB	Public Utilities Board	Kiribati	✓	✓	✓	✓	✓	✓	✓	✓
PUC	Pohnpei Utilities Corporation	Fed States of Micronesia (FSM)	✓	✗	✓	✓	✓	✗	✓	✓
SP	Solomon Power	Solomon Islands	✓	✓	✓	✓	✓	✓	✓	✓
TAU	Te Aponga Uira O Tumu -Te-Varovaro	Cook Islands	✓	✓	✓	✓	✓	✓	✓	✓
TEC	Tuvalu Electricity Corporation	Tuvalu	✗	✓	✓	✓	✓	✓	✓	✓
TPL	Tonga Power Limited	Tonga	✓	✓	✓	✓	✓	✓	✓	✓
UNELCO	UNELCO Vanuatu Limited	Vanuatu	✓	✓	✓	✓	✓	✓	✓	✓
YSPSC	Yap State Public Service Corporation	Fed States of Micronesia (FSM)	✗	✓	✓	✓	✓	✓	✓	✗
Total			20	19	21	21	22	20	23	18

2. GOVERNANCE

2.1 Key Governance Results

The Governance data for the 2016 benchmarking has not changed much compared to 2015 or earlier benchmarking periods for that matter, as there has been no significant government policy changes in the various Pacific Islands and Territories. This situation is also reflected in the governance KPIs.

Table 2.1: Quality Standards and Regulatory Structures of Utilities

Utility	Power Quality Standards	Self-Regulated or Externally Regulated	Public or Private Ownership
ASPA	None	Self	Public
CPUC	None	Self	Public
CUC	US	External	Public
EDT	None	External	Private
EEC	EN50160	External	Private
EPC	None	External	Public
FEA	AUS/NZ	External	Public
GPA	None	External	Public
KAJUR	None	Self	Public
KUA	KUA	Self	Public
MEC	None	Self	Public
PPL	-	External	Public
PPUC	JIS,NEC	Self	Public
PUB	-	External	Public
PUC	-	Self	Public
SP	-	Self	Public
TAU	NZ Standard	External	Public
TEC	AUS & NZ	Self	Public
TPL	TPL Standard	External	Public
UNELCO	Concession Contract	External	Private
YSPSC	NEC	Self	Public

2.2 Governance Analysis

The composite governance score introduced in the 2012 Fiscal Year Report has again been utilised in this years' power benchmarking exercise for analysing if good governance mechanisms are delivering tangible benefits to utilities in the form of improved financial performance. The composite score is comprised of the same weighted indicators as the 2012 Fiscal Year Report, determined from relevant responses in the governance questionnaire using a governance scorecard (Table 2.1).

Table 2.2: Governance Scorecard

Governance Indicator	Good Governance	Poor Governance	Weighting
Are Ministers appointed to the Board?	No	Yes	12%
Are Ministers/ public servants representing the line/sector Ministry appointed to the Board?	No	Yes	12%
Is a Code of Conduct in place and implemented?	Yes	No	8%
Is a commercial mandate in place and implemented?	Yes	No	19%
Is the CEO on performance contract with annual reviews?	Yes	No	8%
Has a Strategic Plan (at least 3 year forecasts) been adopted and implemented?	Yes	No	15%
Is the Annual Report (audited) completed within four months of end of reporting year?	Yes	No	19%
Does the Annual Report disclose performance against Plan?	Yes	No	8%
Total Score			100%

Note: A good governance score results in full marks for each indicator, whilst a poor governance result receives a zero for each applicable indicator. In regard to the indicator on Annual Reports being completed within four months of the end of the reporting year, this has been used as a good practice standard but it is acknowledged that several utilities have agreements with their regulators that allow for longer periods for production of Annual Reports.

The composite governance scores for utilities which provided sufficient responses to enable the weightings to be calculated are represented in Figure 2.1, ranked from lowest to highest score (closest to 100%). As per previous reporting, there is a significant spread in terms of governance perspectives in the region, ranging from a low of 0% for KAJUR up to 100% for PPUC and TPL.

Figure 2.1: Composite Governance Score

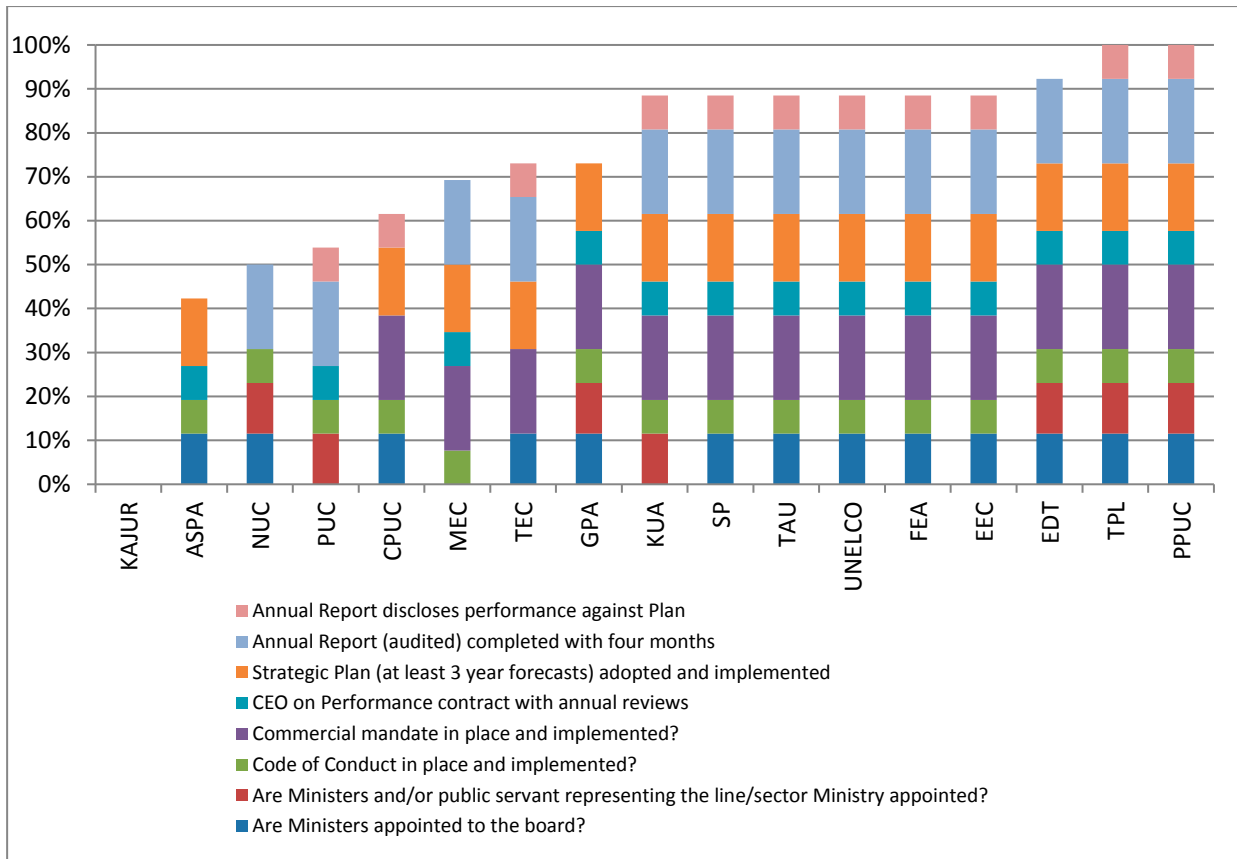
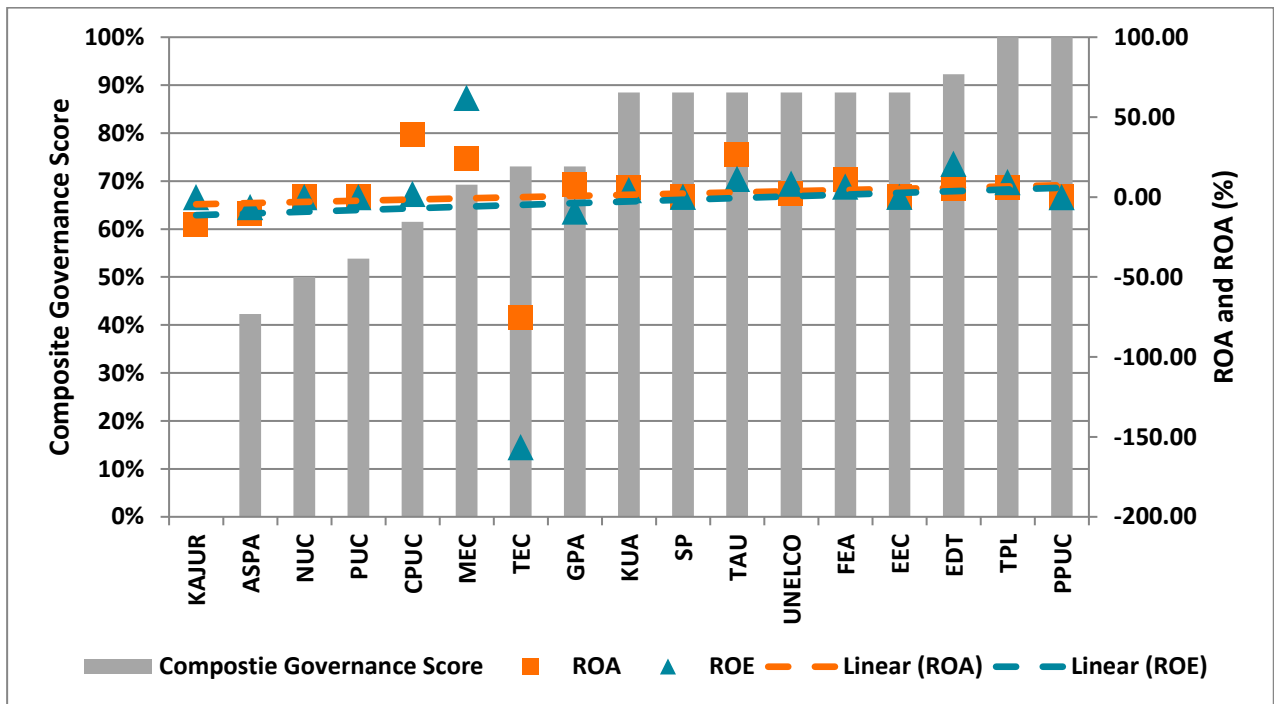


Figure 2.2: 2016 FY Composite Governance Score compared with ROE and ROA



3. GENDER

Overall, the number of females employed as a proportion of total staffing in the Pacific power utilities has decreased to 19.2% in the 2016 FY as compared with 21.3% in 2015. In technical positions, there has been marginal increase in the number of female staff in 2016 increasing from 4% in 2015 to 4.7% in 2016. The discrepancy in senior staff employment in the region has remained unchanged with 72% male and 28% female.

Table 3.1: Key Gender Statistics

Workforce male/female role	Regional average
Total staff (male)	80.8%
Total staff (female)	19.2%
Technical staff (male)	95.3%
Technical staff (female)	4.7%
Senior staff (male)	72%
Senior staff (female)	28%
Senior female staff as a proportion of total staff by role	
Finance	20%
Procurement / Supply	8%
Human Resources	10%
PR/Cust Service/Comms	29%
Admin	20%
Other	13%

4. DATA RELIABILITY

Data reliability self-assessment was introduced to the benchmarking exercise in 2012. Participating utilities are asked to provide a self-assessed reliability grade for six key components of the primary data, as set out in Table 4.1. This was intended to help better understand data quality issues and encourage improvements in data reliability.

Table 4.1: Key Data Component Reliability Assessment Questions

Question	Description
(i)	How is fuel consumption calculated or derived?
(ii)	How are generation quantities calculated or derived?
(iii)	How are customer outages impacts calculated or derived?
(iv)	How are network demands and capacity utilisation calculated or derived?
(v)	How is the number of connections or customers calculated?
(vi)	Where is financial information sourced from?

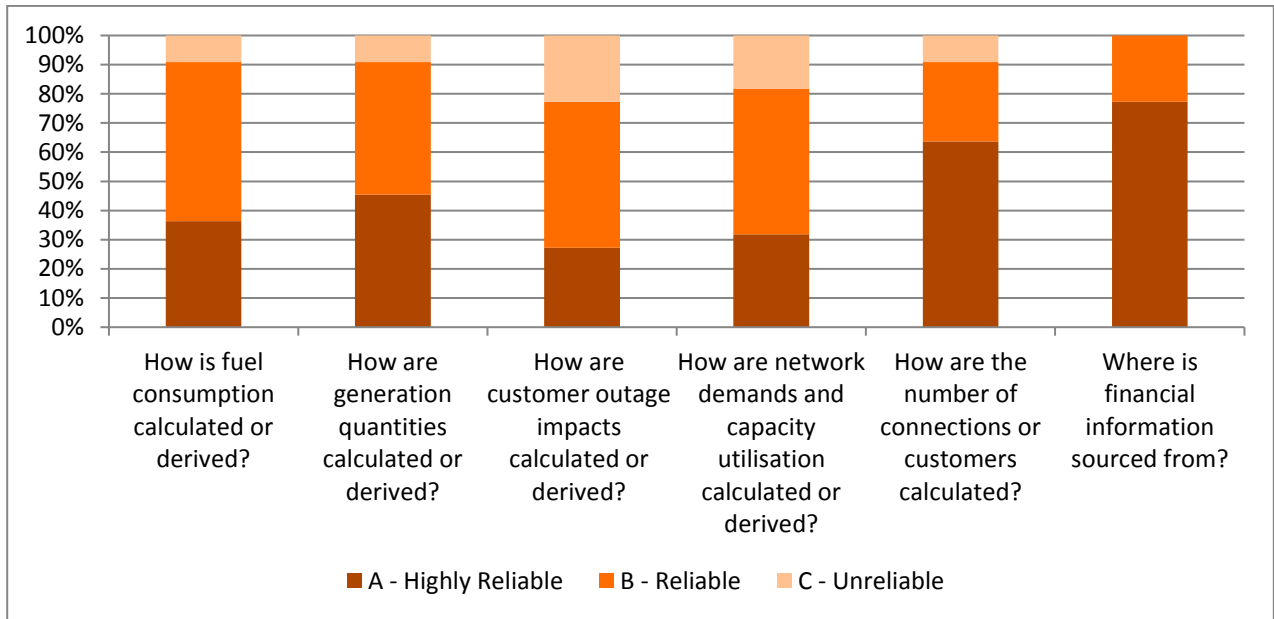
As with previous benchmarking reports, a 'Grade A' score represents highly reliable data, 'Grade B' reliable data, 'Grade C' unreliable data and 'Grade D' highly unreliable data. The definitions of each of these grades are provided below in Table 4.2.

Table 4.2: Grading Schema

Question	Description	Description
A	Highly Reliable	Data is based on sound records, procedures, investigations or analyses that are properly documented and recognised as the best available assessment methods. Effective metering or measurement systems exist.
B	Reliable	Generally as in Category A, but with minor shortcomings, e.g. some of the documentation is missing, the assessment is old or some reliance on unconfirmed reports; or there is some extrapolation made (e.g. extrapolations from records that cover more than 50 % of the utility system).
C	Unreliable	Generally as in categories A or B, but data is based on extrapolations from records that cover more than 30 % (but less than 50 %) of the utility system.
D	Highly Unreliable	Data is based on unconfirmed verbal reports and/or cursory inspections or analysis, including extrapolations from such reports/inspections/analysis. There are no reliable metering or measurement systems.

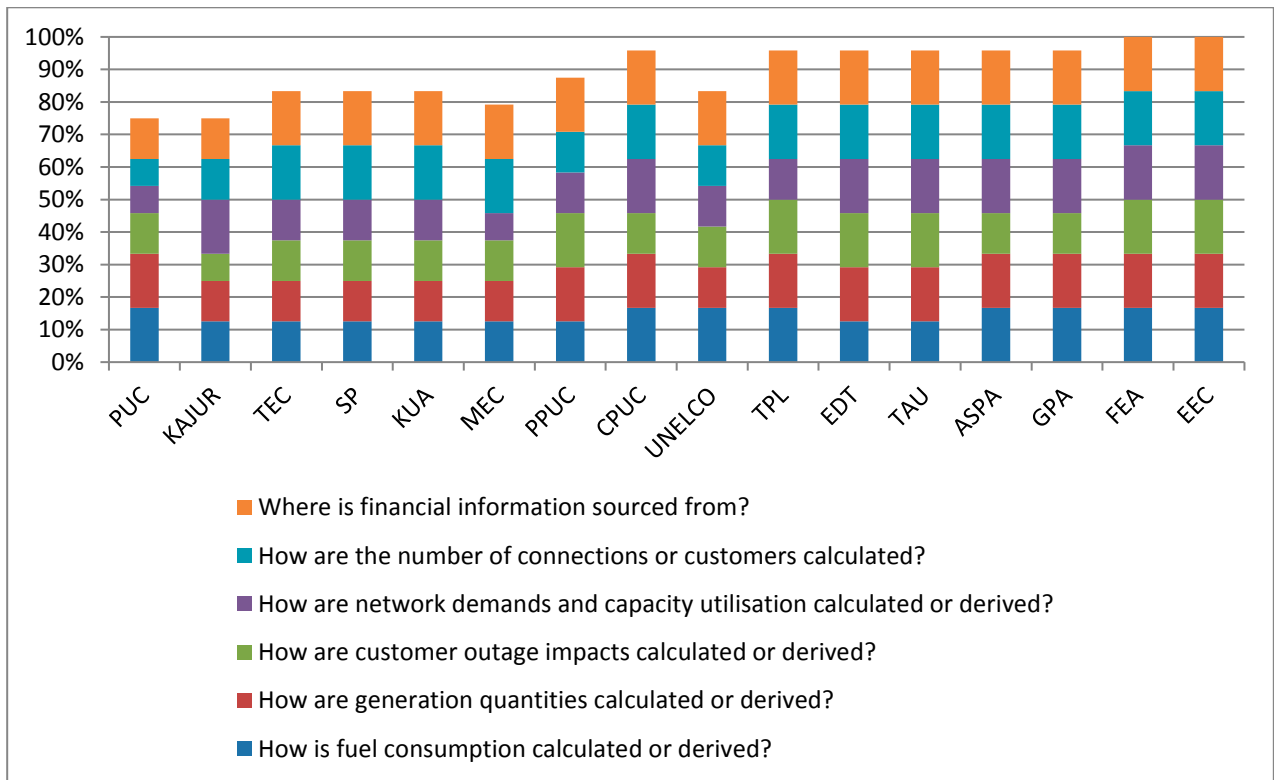
Eighteen utilities participating in the 2016 FY data exercise. As per Figure 4.1, it can be seen that no utilities reported data as being Grade D (highly unreliable), with financial data and the calculation of customer connections typically being the most reliable data submitted keeping the trend from previous benchmarking. By comparison, further work continues to be required in improving data quality of customer outage impacts and network demands.

Figure 4.1: Utility Reliability Grade for Key Performance Indicators



Data reliability is important when considering relative performance between utilities, as readers of this report should take into account the credibility of submitted results before drawing any conclusions. Figure 4.2 therefore aggregates the reliability scores submitted by each of the utilities in order to rank the relative reliability of the data that was submitted. These aggregate scores have furthermore been utilised as a weighting in this reporting in calculating the Composite Indicator for the 2016 FY.

Figure 4.2: Breakdown of Reliability Grades Assessment by Utility



5. KPI RESULTS

5.1 Introduction

This section provides performance results for the 23 (2015 FY) and 18 (2016 FY) utilities that participated in each relevant reporting year. The results from the previous 2014 FY reported have also been included for further longitudinal comparison. The results are comprised of 46 KPIs, with each indicator graphically presented with both the regional average (arithmetic mean) and median (middle) values, including also a comparison of 2014 results where available.

An indication of utility size is also provided via a colour coding of red, orange or yellow as determined by utility size in accordance with the PPA's membership level categorisations: yellow indicates an annual peak load of less than 5MW (small); orange indicates an annual peak load of between 5MW and 30MW (medium); and red indicates an annual peak load of 30MW or greater (large). In order to facilitate comparison of results by size, all graphs are shown in the order of minimum to maximum demand. Table 5.1 furthermore provides an overview of some key characteristics of the participating utilities, including the applicable colour coding. It is important in reviewing this information that any conclusions closely consider the similarities and differences of operating conditions of other utilities.

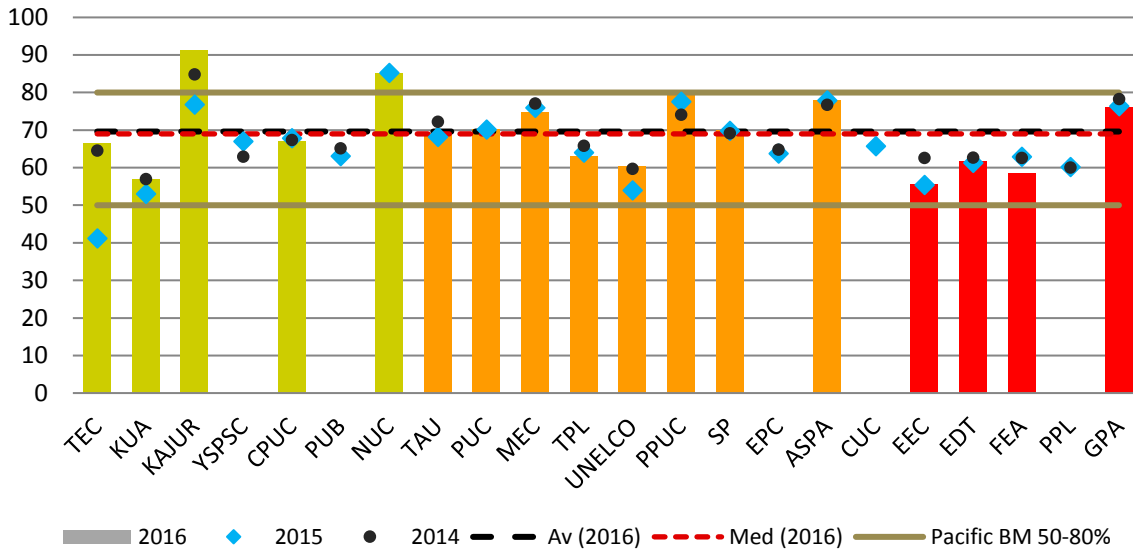
Table 5.1: Utility Key Characteristics

Utility and colour code	Peak Demand (MW) 2015	Size Category (S / M / L)	Outer Islands Serviced (Y/N)
ASPA	23	Medium	Yes
CPUC	2.3	Small	Yes
CUC	36.3	Large	Yes
EDT	96.3	Large	Yes
EEC	99.1	Large	Yes
EPC	21.5	Medium	Yes
FEA	155.5	Large	Yes
GPA	255	Large	No
KAJUR	2.1	Small	No
KUA	1.1	Small	No
MEC	8.6	Medium	Yes
NPC	0.6	Small	No
NUC	4.2	Small	No
PPL	114.2	Large	Yes
PPUC	12	Medium	Yes
PUB	4.1	Small	No
PUC	6.3	Medium	No
SP	14.4	Medium	Yes
TAU	4.5	Small	No
TEC	1.4	Small	Yes
TPL	8.5	Medium	Yes
UNELCO	11.7	Medium	Yes
YSPSC	2.0	Small	Yes

5.2 Generation Indicators

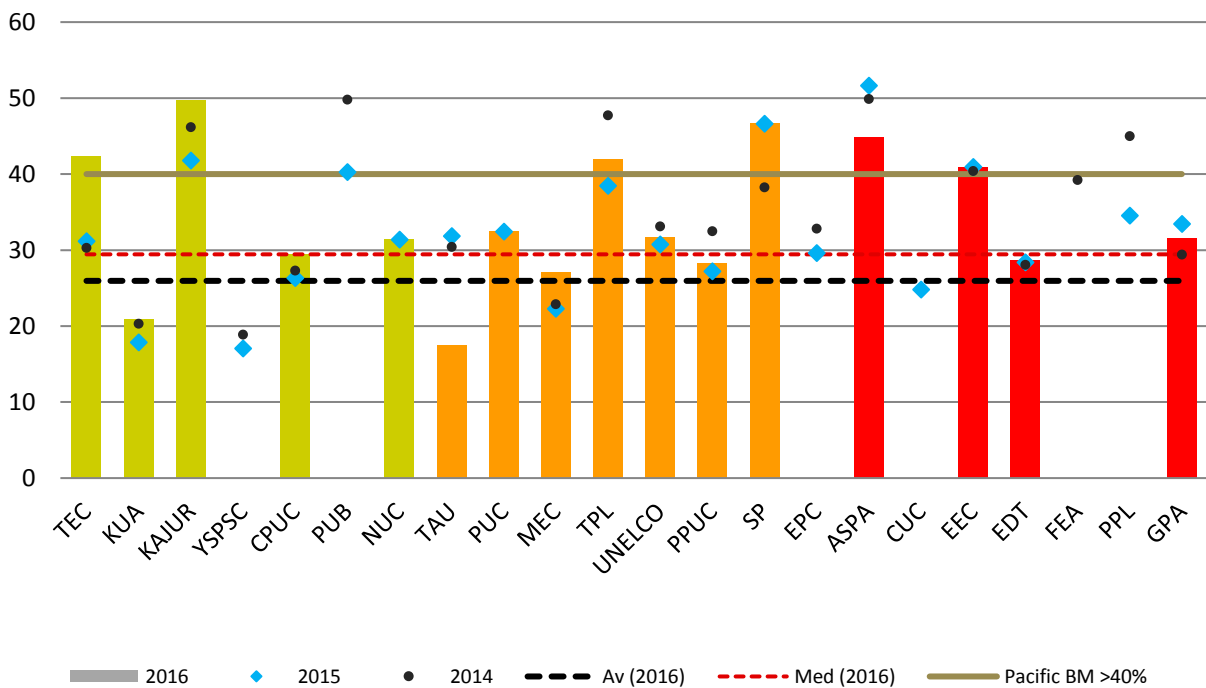
(i) Load Factor

Figure 5.1: Load Factor (%) 2016 (2015) (2014)



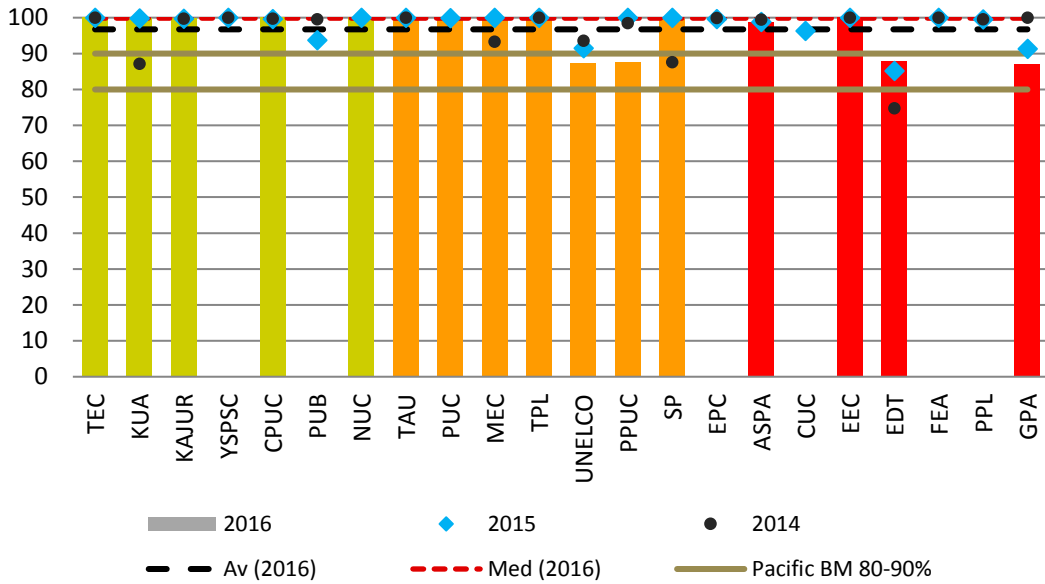
(ii) Capacity Factor

Figure 5.2: Capacity Factor (%) 2016 (2015) (2014)



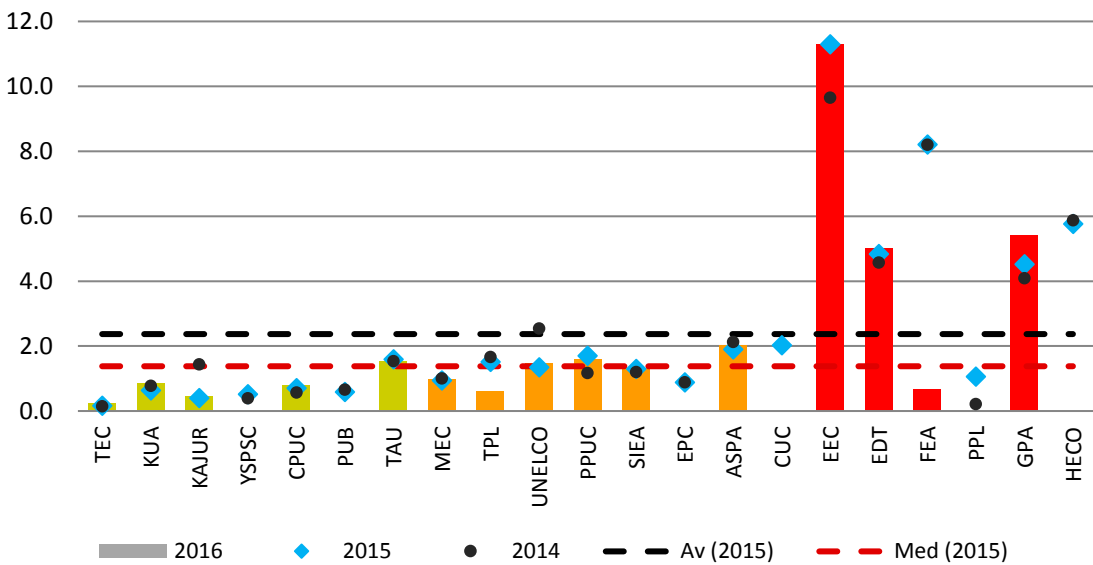
(iii) Availability Factor

Figure 5.3: Availability Factor (%) 2016 (2015) (2014)



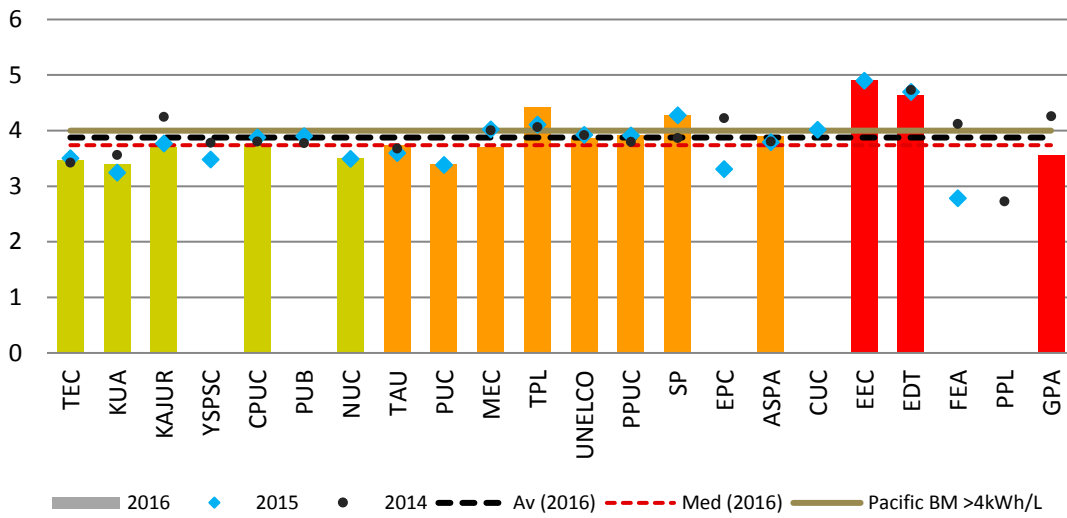
(iv) Generation Labour Productivity

Figure 5.4: Generation Labour Productivity (GWh/FTE Generation Employee) 2016 (2015) (2014)



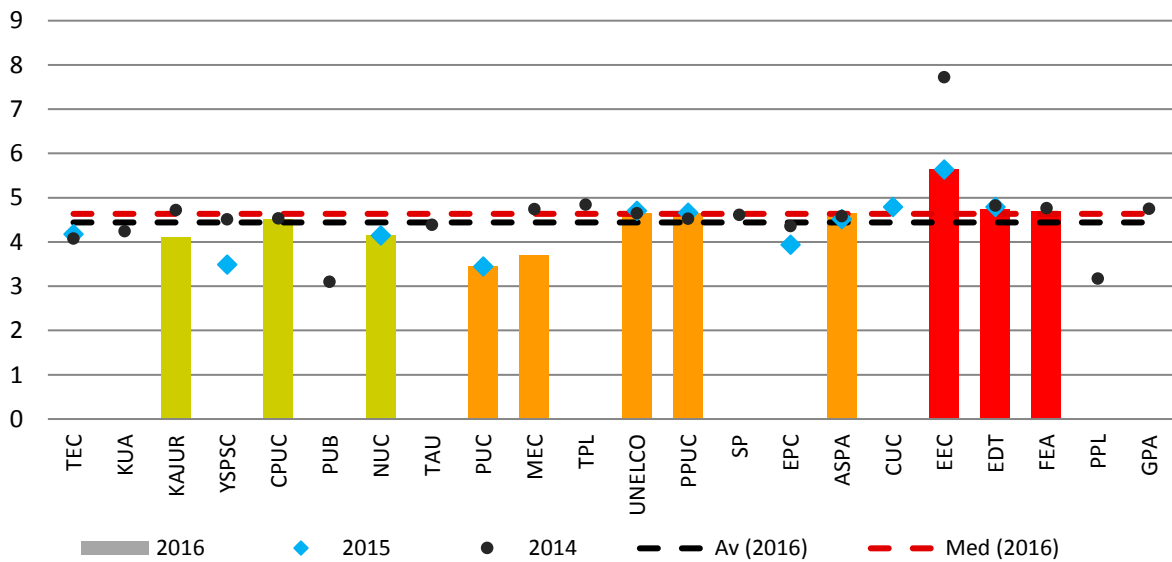
(v) Specific Fuel Consumption (kWh/L)

Figure 5.5: Specific Fuel Consumption (kWh/L) 2016 (2015) (2014)



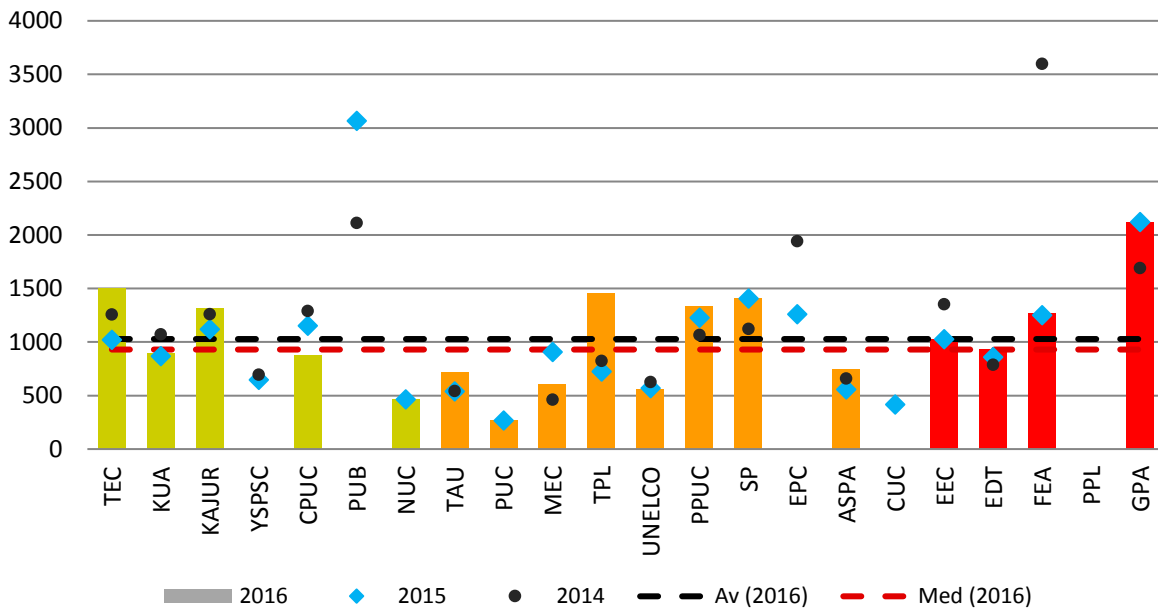
(vi) Specific Fuel Consumption (kWh/kg)

Figure 5.6: Specific Fuel Consumption (kWh/kg) 2016 (2015) (2014)



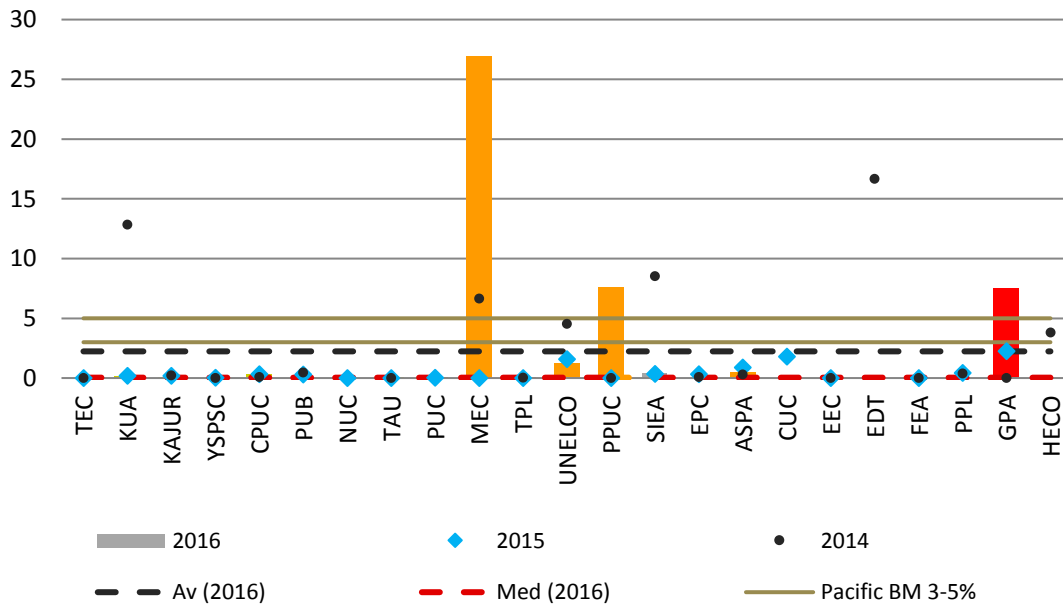
(vii) Lubricating Oil Consumption

Figure 5.7: Lubricating Oil Consumption Efficiency (kWh/litre) 2016 (2015) (2014)



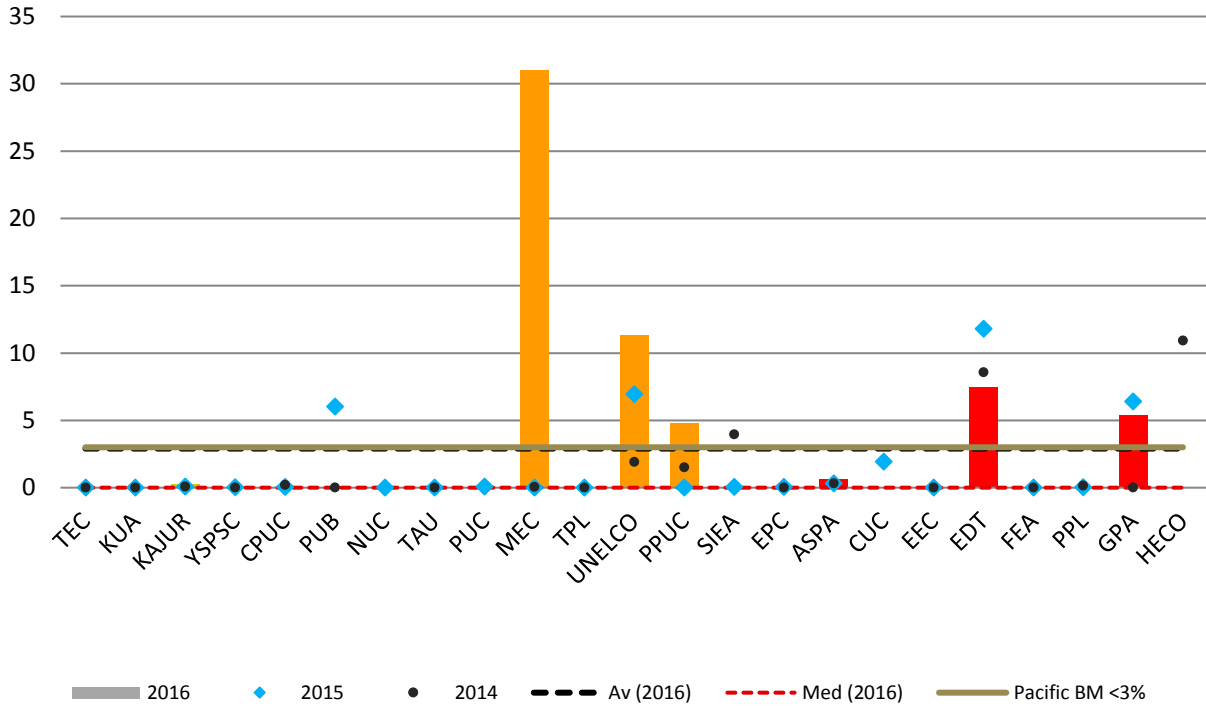
(viii) Forced Outage

Figure 5.8: Forced Outage (%) 2016 (2015) (2014)



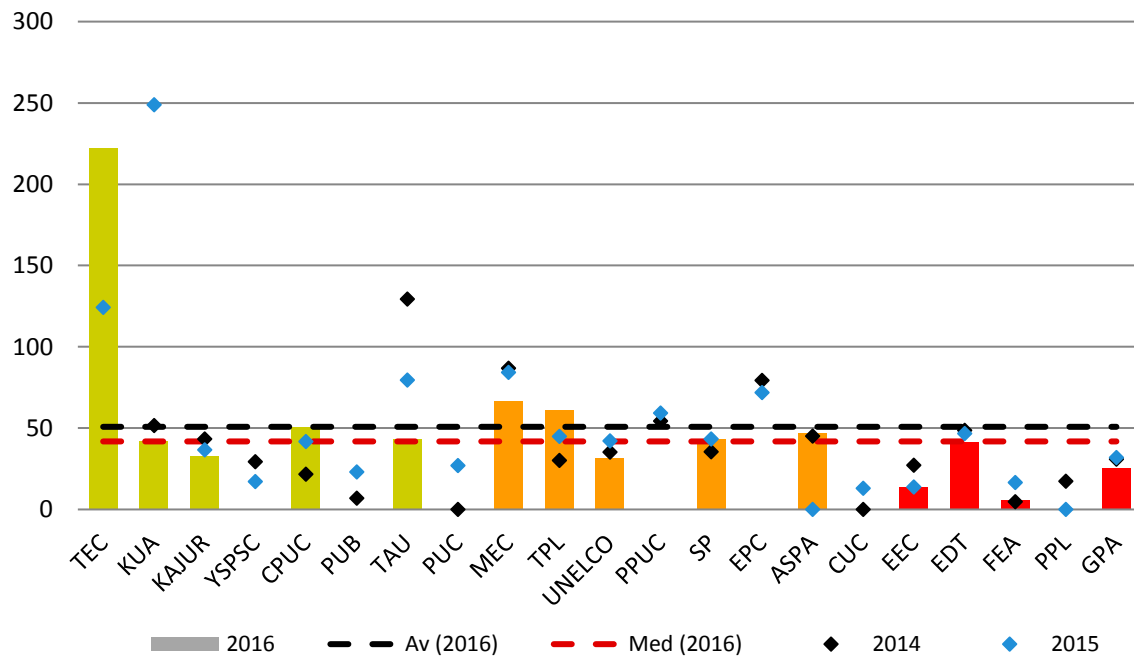
(ix) Planned Outage

Figure 5.9: Planned Outage (%) 2016 (2015) (2014)



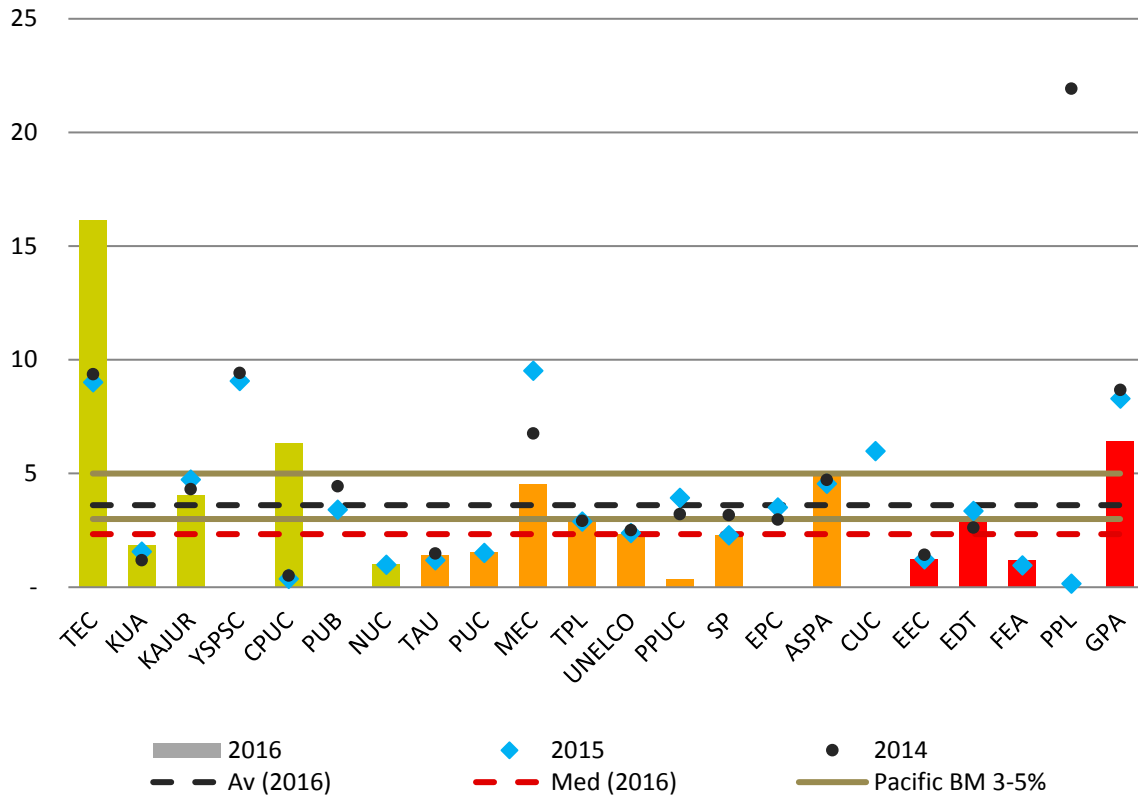
(x) Generation Operations and Maintenance (O&M) Costs

Figure 5.10: Generation O&M Costs (USD per MWh) 2016 (2015) (2014)



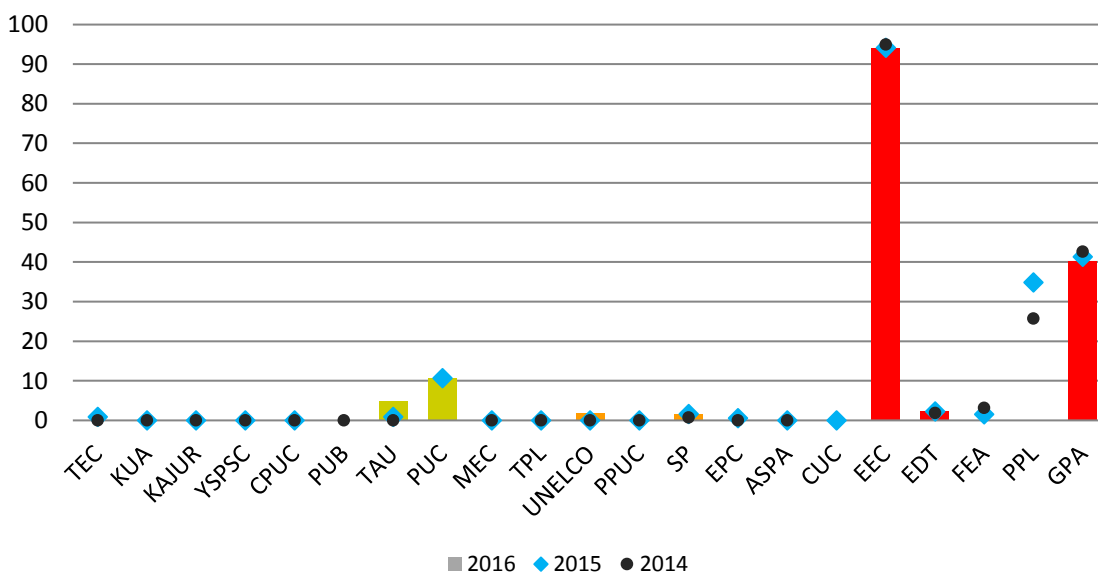
(xi) Power Station Usage / Station Auxiliaries

Figure 5.11: Station Energy (Auxiliaries) Use for Pacific Utilities (%) 2016 (2015) (2014)



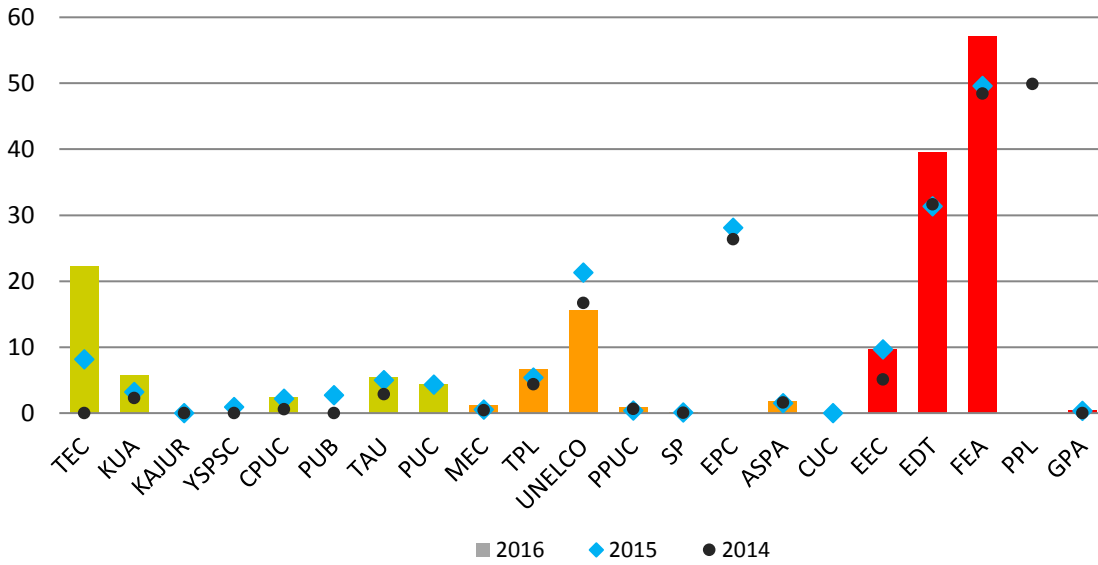
(xii) IPP Generation

Figure 5.12: IPP Generation (%) 2016 (2015) (2014)



(xiii) Renewable Energy to Grid

Figure 5.13: Renewable Energy Generation - All Utilities, Main Grid (%) 2016 (2015) (2014)



5.3 Transmission Indicators

(i) Transmission (General)

For the purpose of the benchmarking exercise, the transmission network is defined as equipment operating at a voltage greater than 33kV. For utilities that have a transmission network, the benchmarking questionnaire requested data to determine transmission losses and outage statistics as a measure of transmission system reliability. System reliability has been tracked based on transmission reliability (outage events per kilometre) and average transmission outage duration (in hours).

Table 5.2: Transmission Indicators 2015, 2016

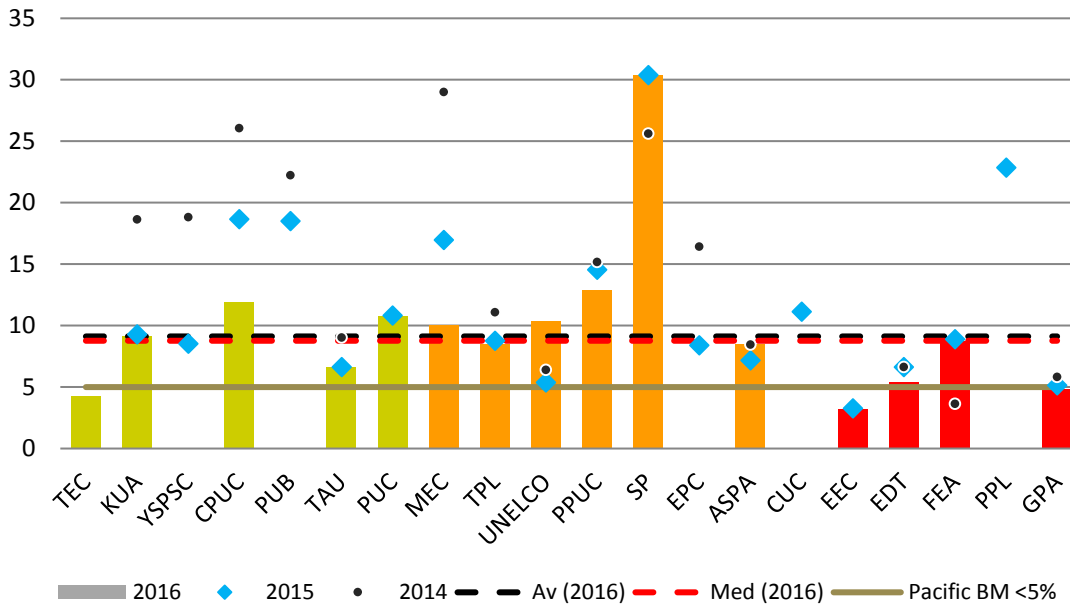
Utility	Transmission Losses (%)		Transmission Reliability (Outages/100km)		Transmission SAIDI (min/customer)			
	2015	2016	2015	2016	Unplanned.	Planned	Unplanned.	Planned
					2015		2016	
EDT	2.1	0.95	5.1	0.84	-	-	3.1	0
FEA		43	2.7	0	-	-	0	0
GPA	0.3	14.5	14.5	32.3	-	-	567.1	94.39
PPL		-	33	-	67.1	35918	-	-

Of the 18 Pacific power utilities participated in the 2016 FY benchmarking exercise, four utilities have transmission networks: GPA, PPL, FEA and EDT.

5.4 Distribution Indicators

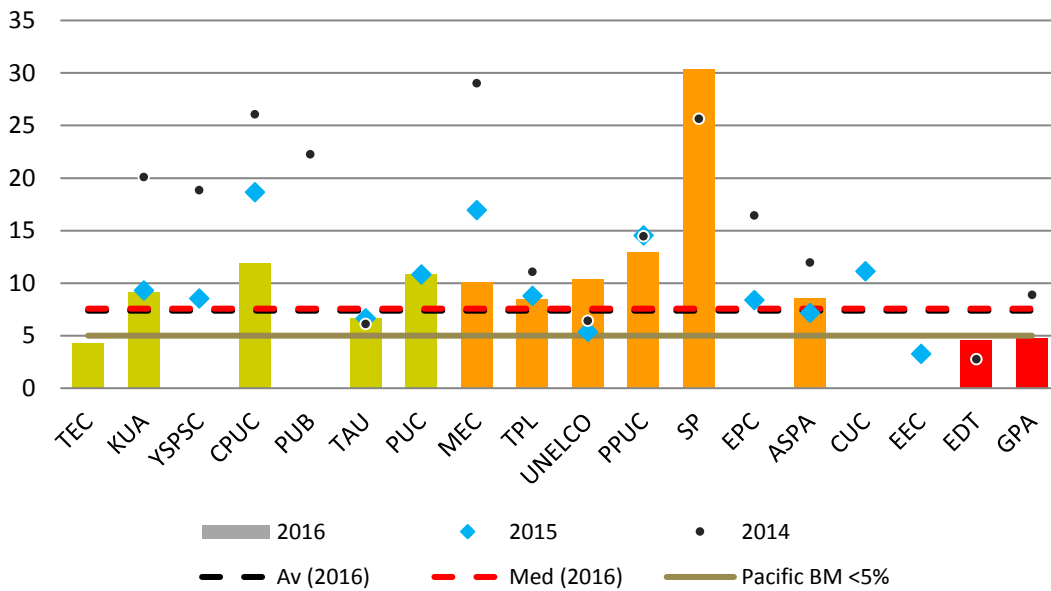
(i) Network Delivery Losses

Figure 5.14: Network Delivery Losses (%) 2016 (2015) (2014)



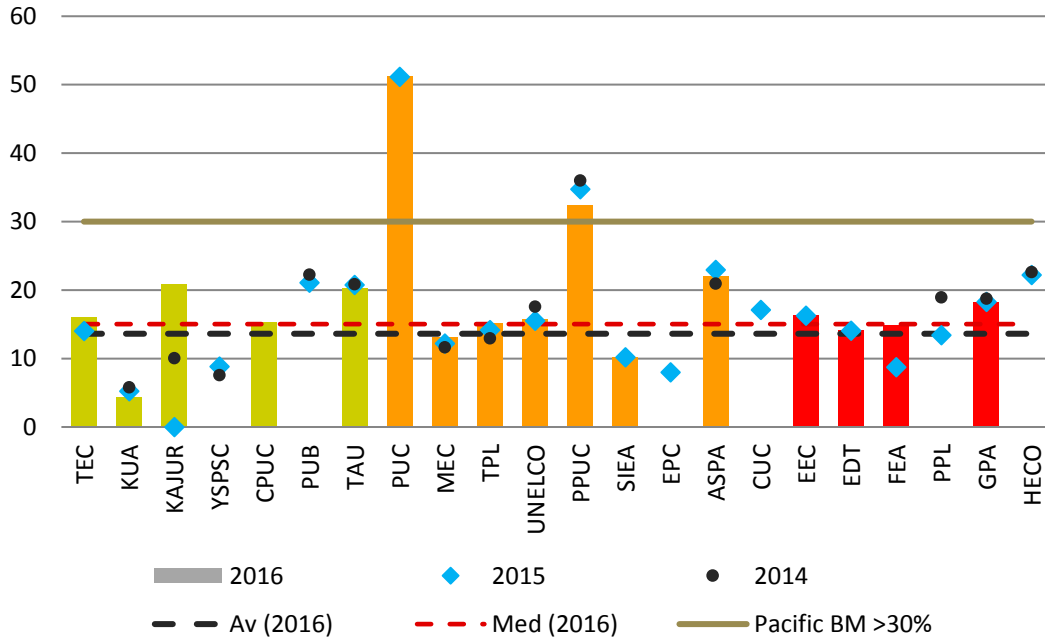
(ii) Distribution Losses

Figure 5.15: Distribution Losses Reported by Utilities (%) 2016 (2015) (2014)



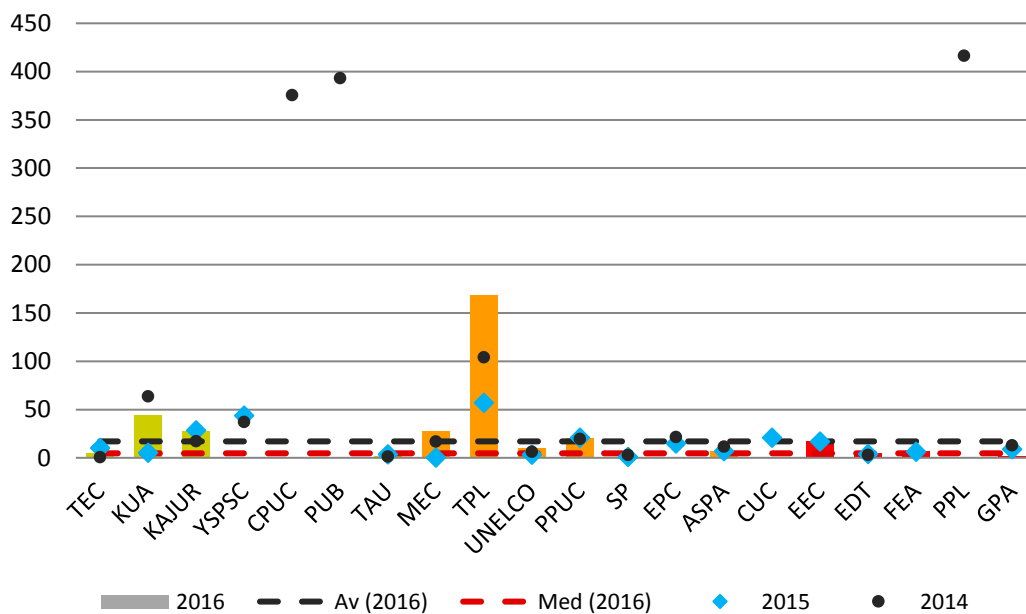
(iii) Distribution Transformer Utilisation

Figure 5.16: Distribution Transformer Utilisation (%) 2016 (2015) (2014)



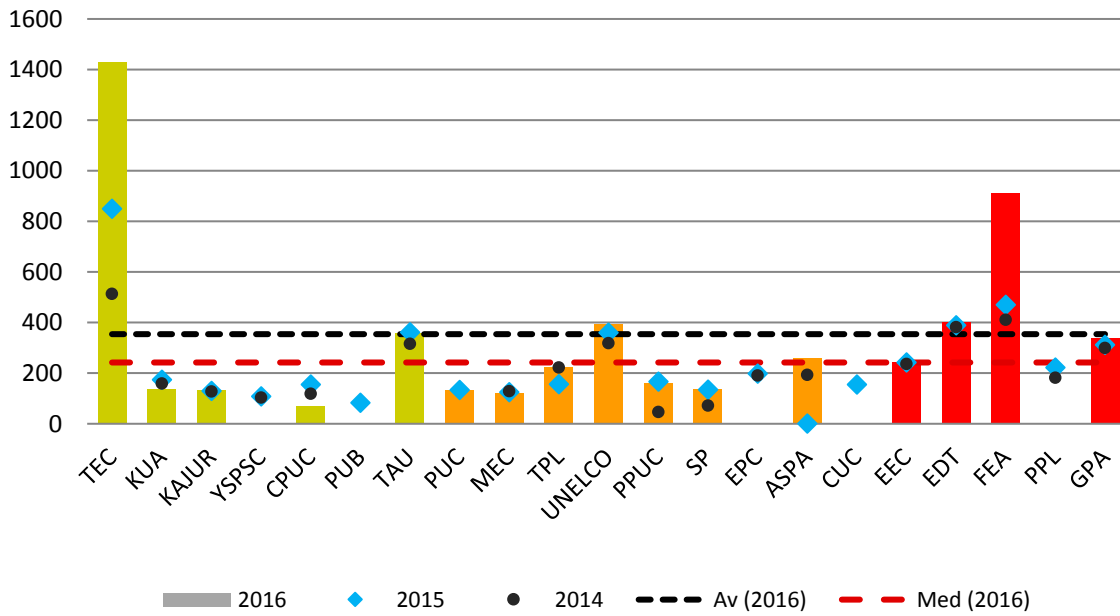
(iv) Distribution Reliability

Figure 5.17: Distribution Reliability (Events per 100 km) 2016 (2015) (2014)



(v) Customers per Distribution Employee

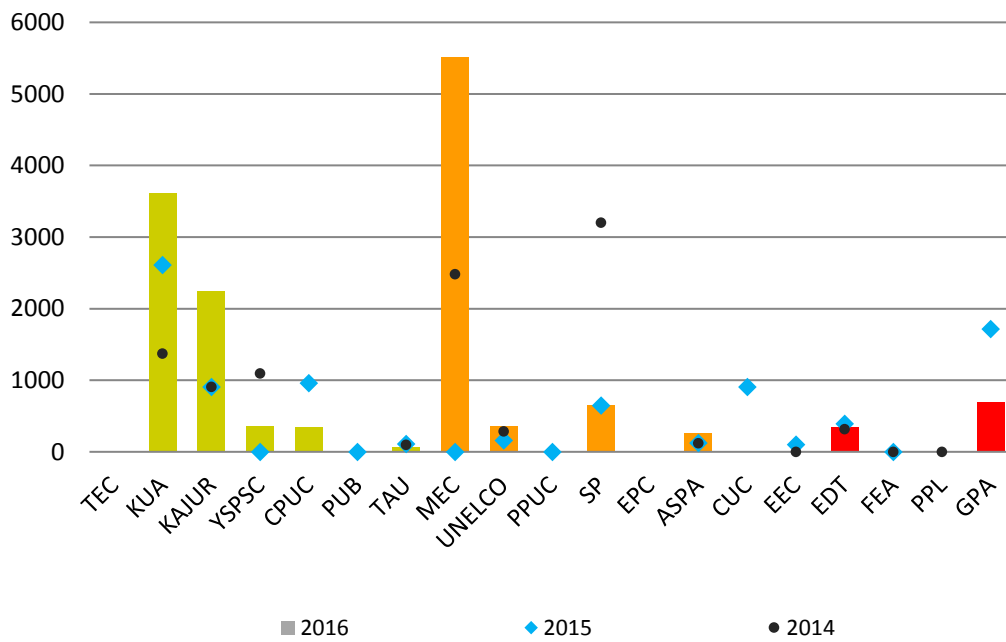
Figure 5.18: Customers per Distribution Employee 2016 (2015) (2014)



5.5 SAIDI and SAIFI

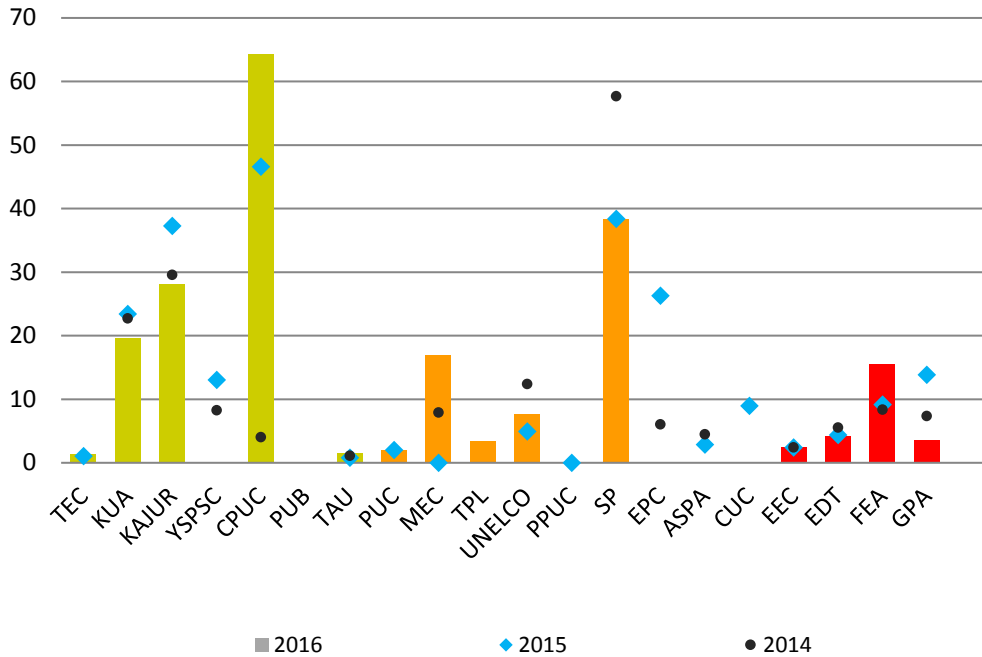
(i) System Average Interruption Duration Index (SAIDI)

Figure 5.19: SAIDI Interruptions (Minutes per Customer) 2016 (2015) (2014)



(ii) System Average Interruption Frequency Index (SAIFI)

Figure 5.20: SAIFI Interruption Frequency (Interruptions per Customer) 2016 (2015) (2014)



5.6 Financial Indicators

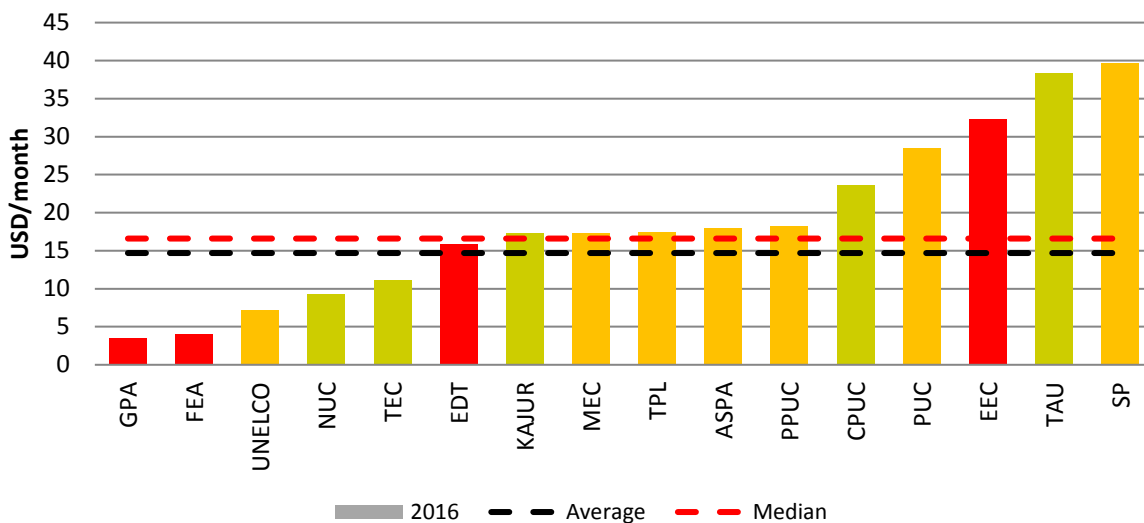
(i) Tariff Analysis

General

Conducting tariff analysis of Pacific utilities is highly complex due to the different tariff schedules and structures for the total 25 Pacific power utilities.

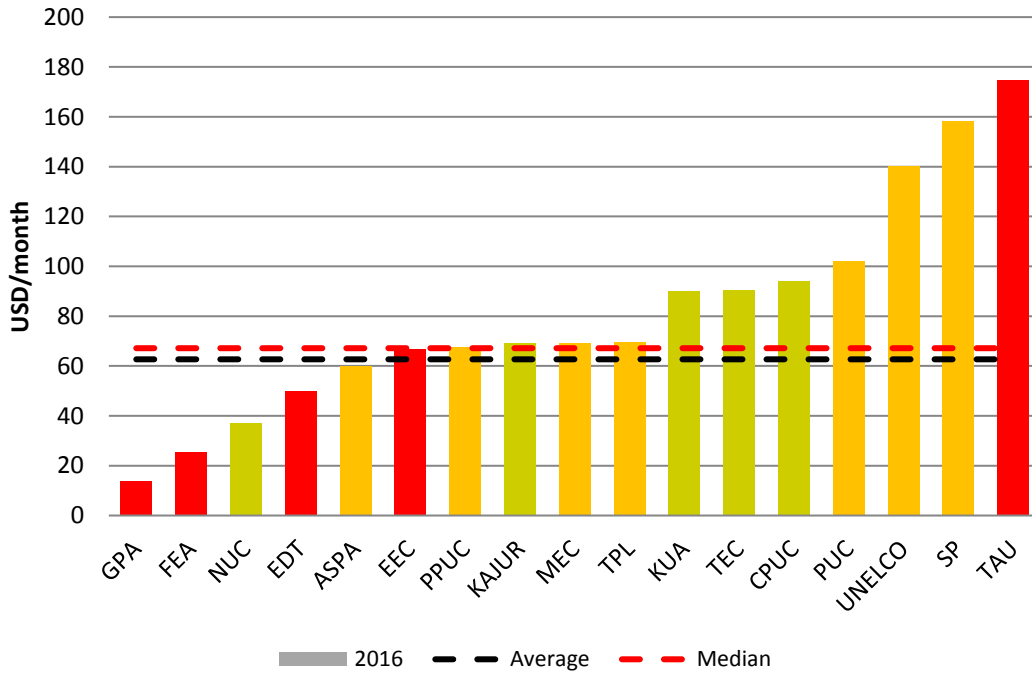
Domestic - 50kWh/month

Figure 5.21: Domestic Consumer Cost (USD per month) 2016 for 50kWh Consumption



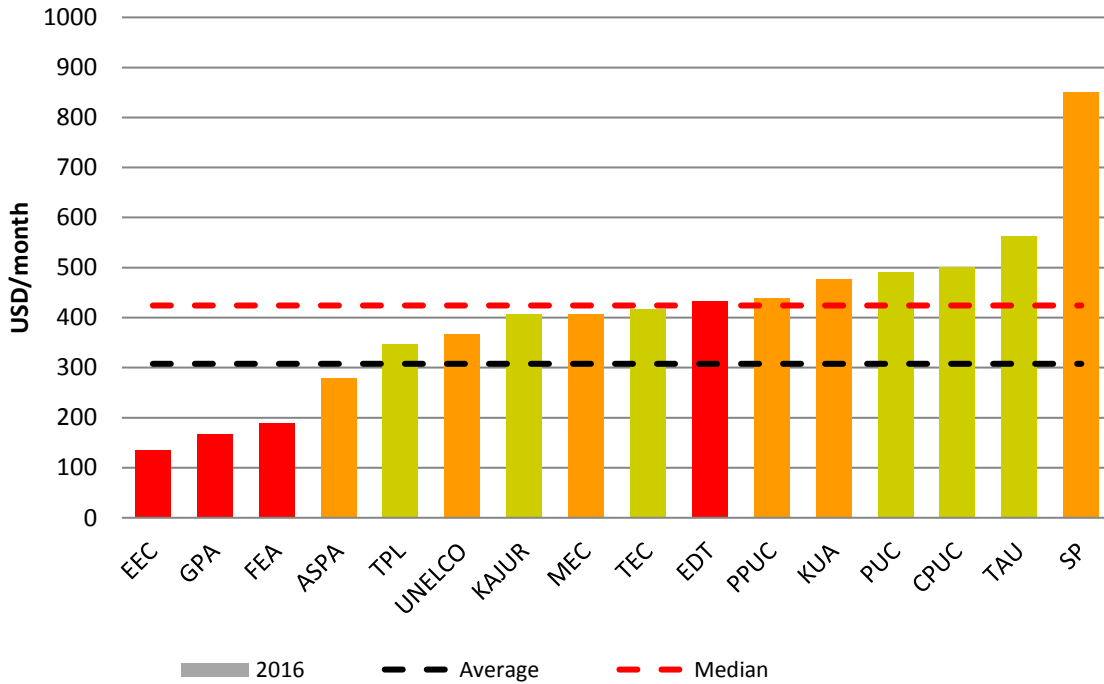
Domestic - 200kWh/month

Figure 5.22: Domestic Consumer Cost (USD per month) 2016 for 200kWh Consumption



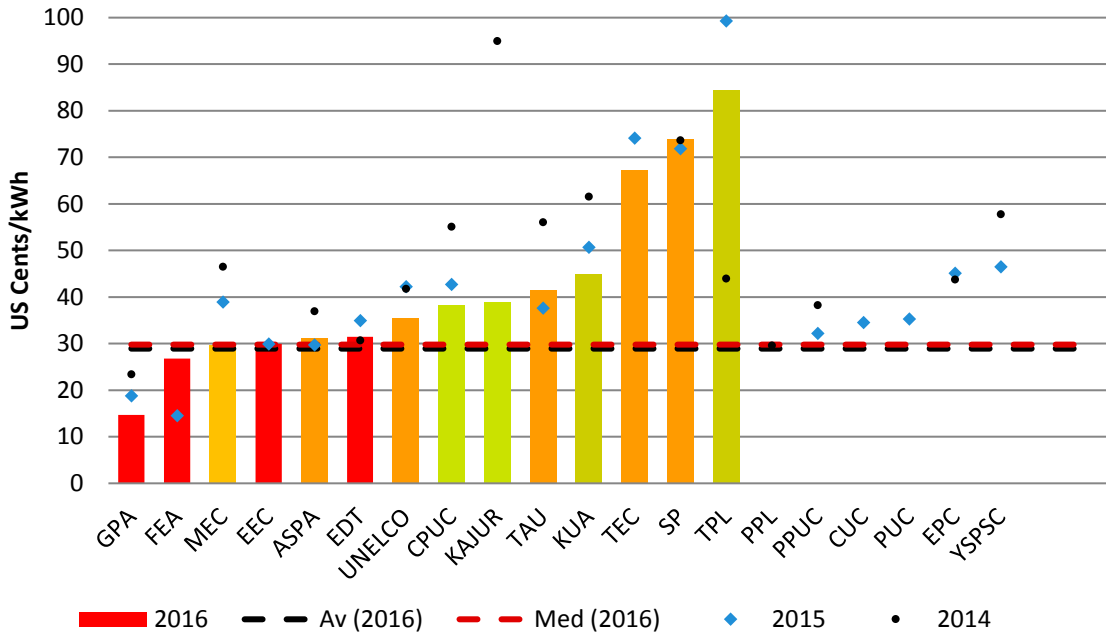
Commercial - 1000kWh/month

Figure 5.23: Commercial Consumer Cost (USD per month) 2016 for 1000kWh Consumption



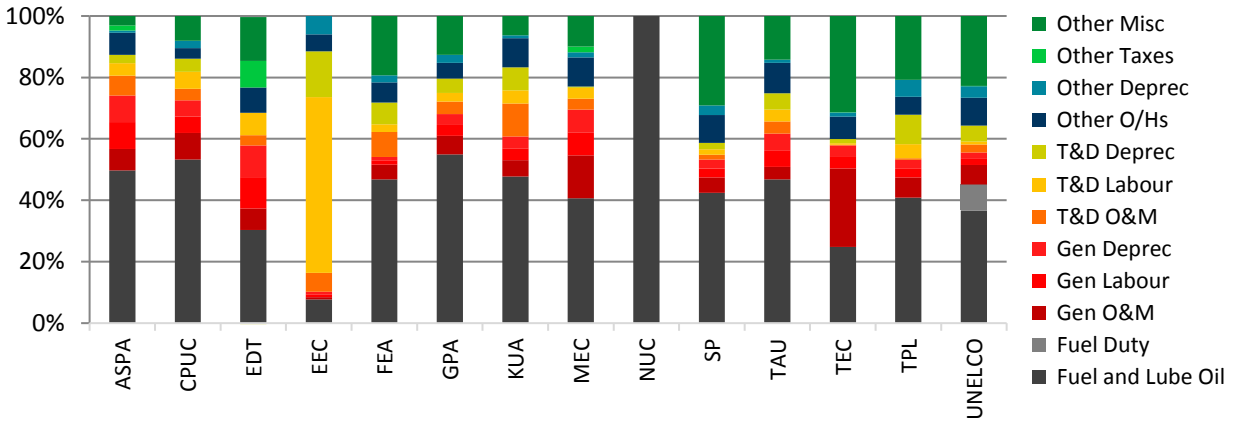
(ii) Average Supply Costs

Figure 5.24: Average Supply Costs (US Cents/kWh) 2016 (2015) (2014)



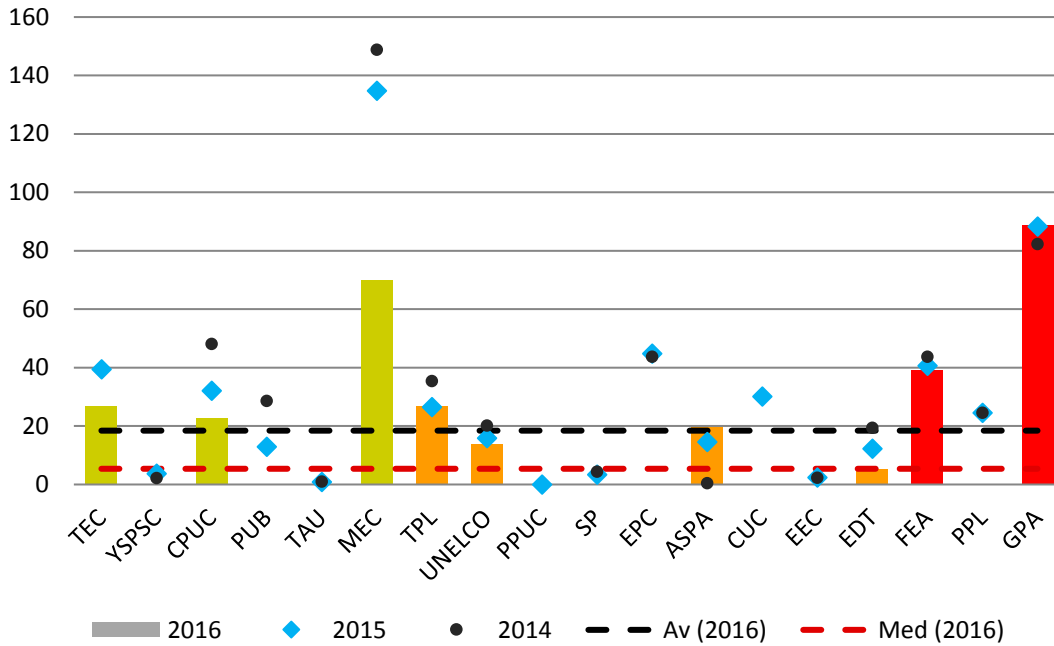
(iii) Utility Cost Breakdown

Figure 5.25: Utility Cost Breakdown (%) 2016



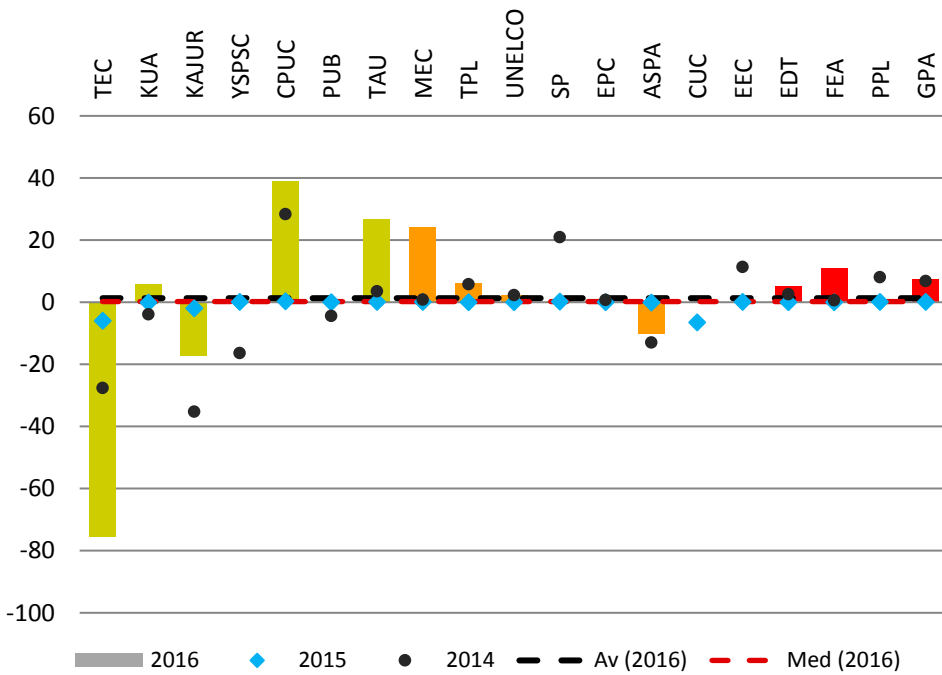
(iv) Debt to Equity Ratio

Figure 5.26: Debt to Equity Ratio (%) 2016 (2015) (2014)



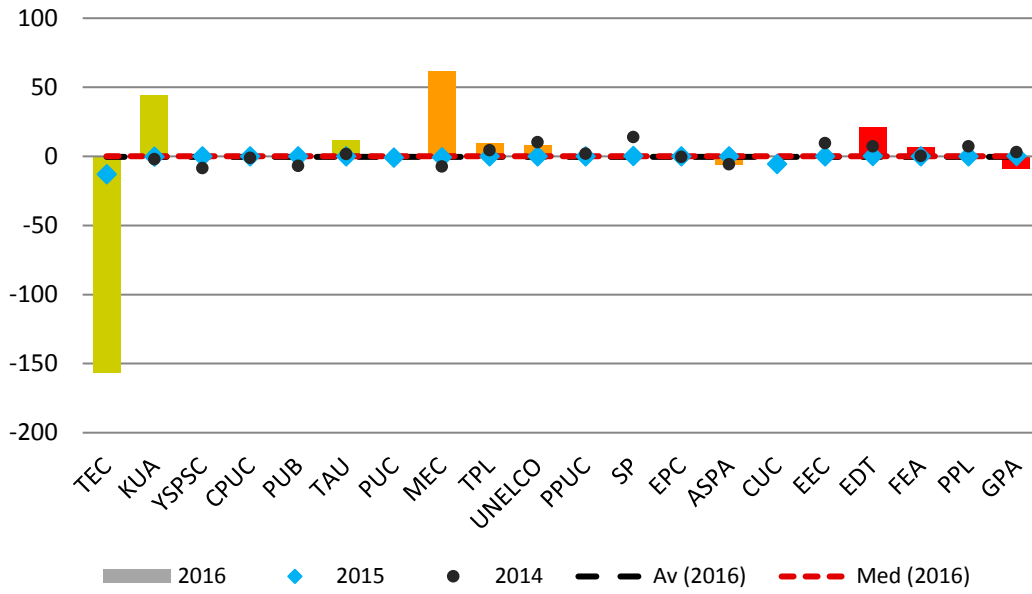
(v) Rate of Return on Assets

Figure 5.27: Rate of Return on Total Operating Assets in 2016 (2015) (2014) (%)



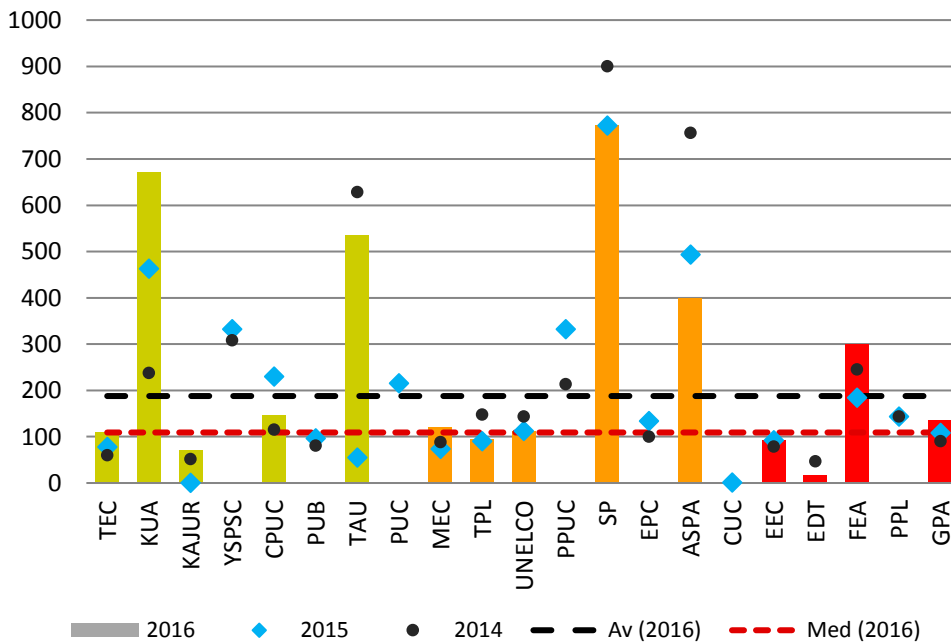
(vi) Return on Equity

Figure 5.28: Return on Equity (%) 2016 (2015) (2014)



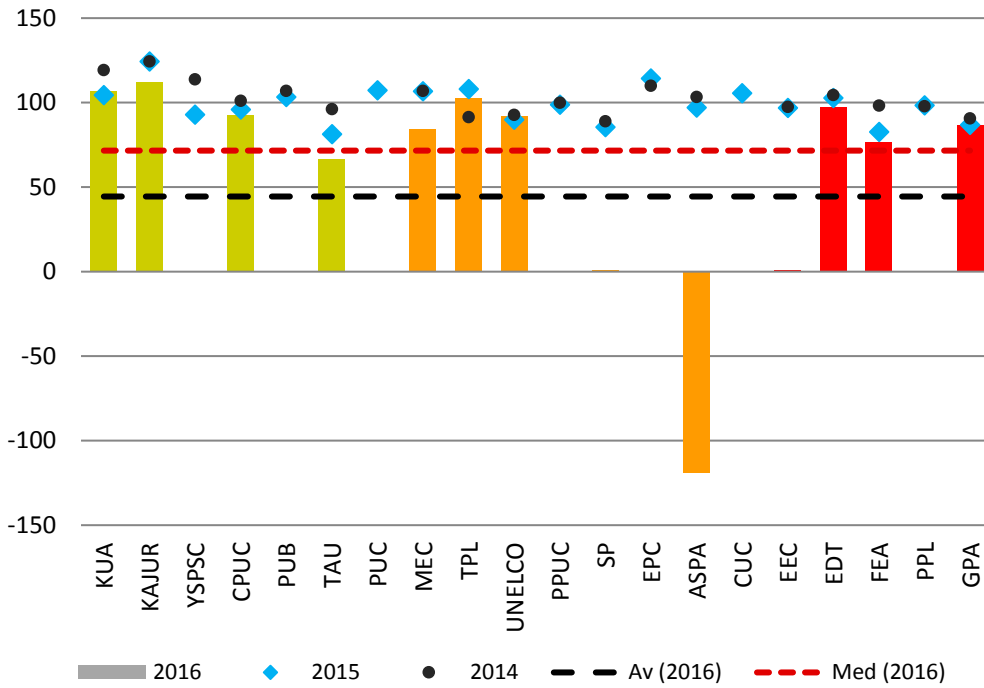
(vii) Current Ratio

Figure 5.29: Reported Current Ratio (%) 2016 (2015) (2014)



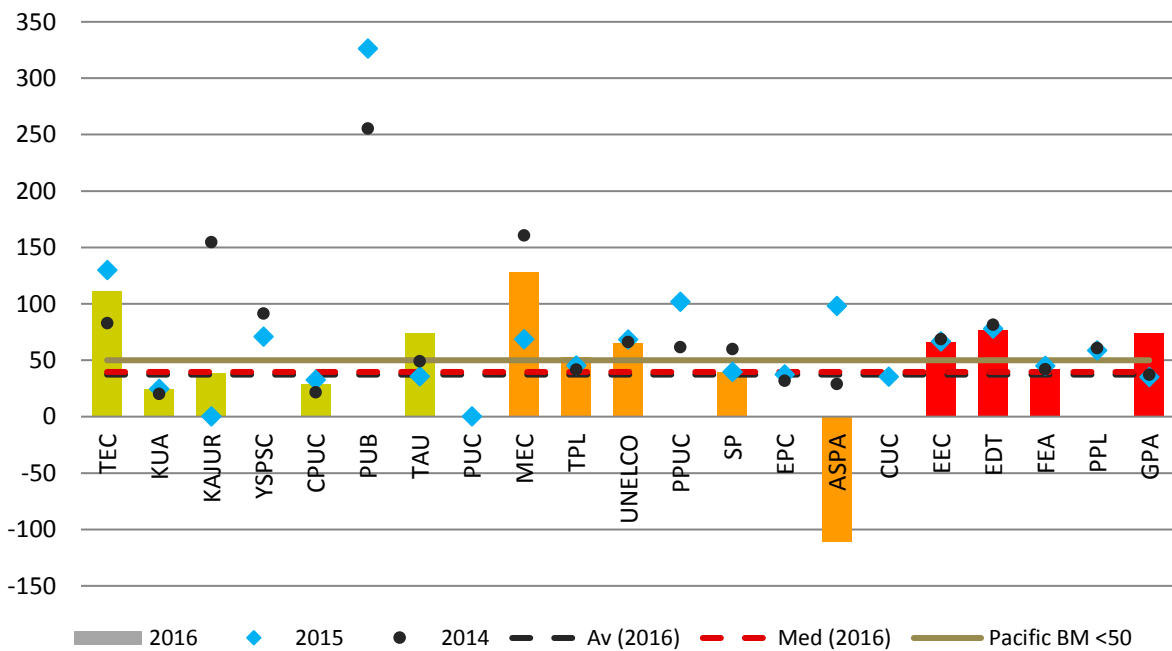
(viii) Operating Ratio

Figure 5.30: Operating Ratio in 2016 (2015) (2014)



(ix) Debtor Days

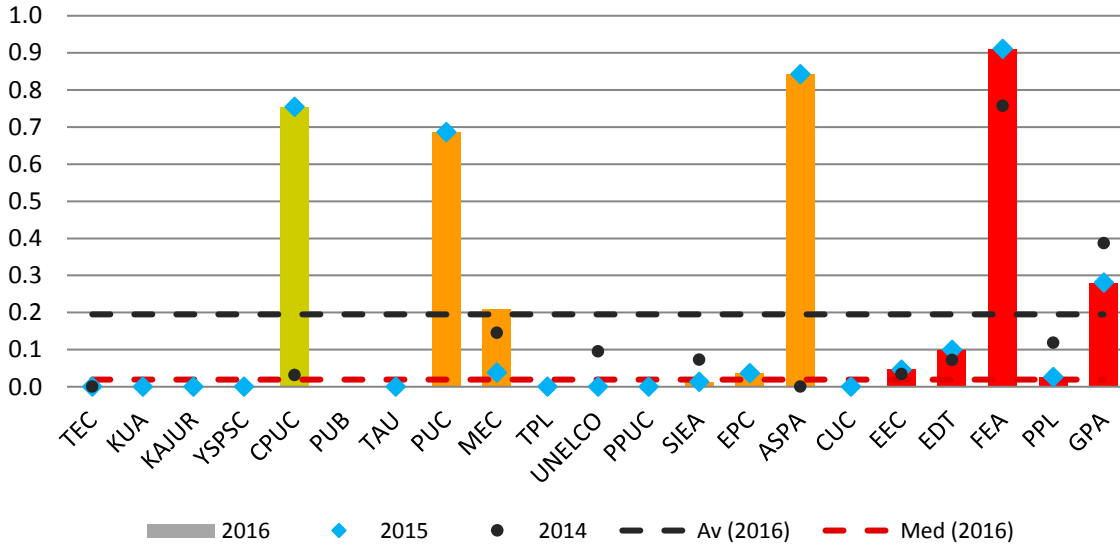
Figure 5.31: Reported Debtor Days (Days) 2016 (2015) (2014)



5.7 Human Resources and Safety Indicators

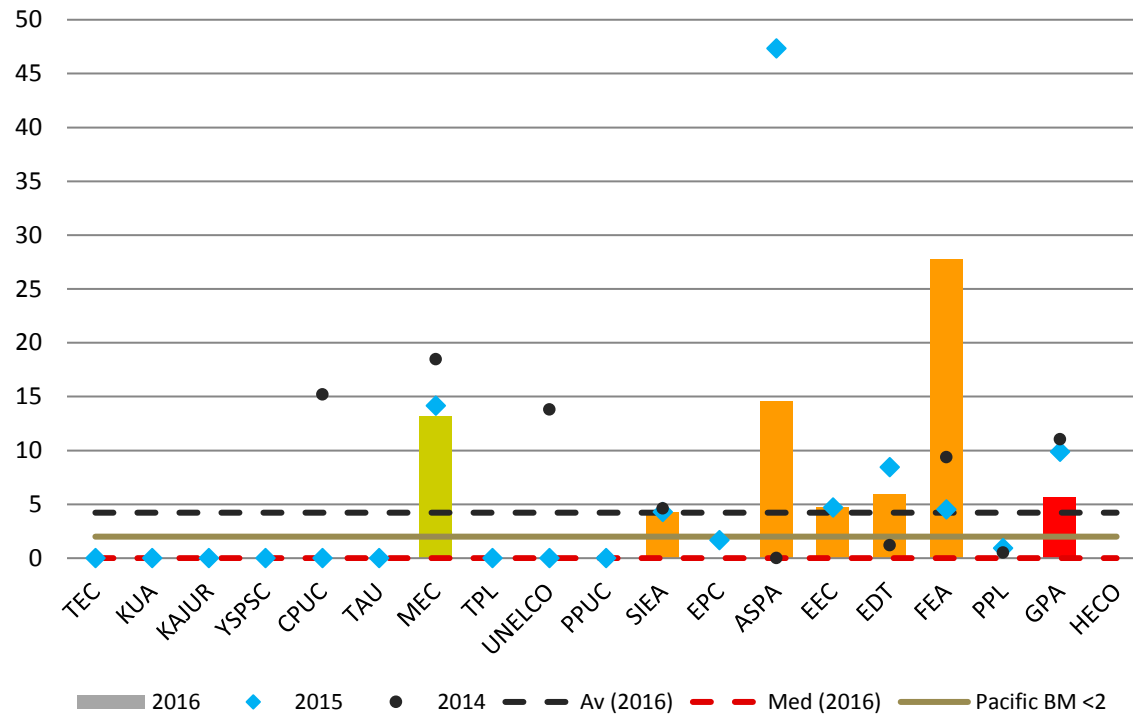
(i) Lost Time Injury Duration Rate

Figure 5.32: LTIDR (Days per FTE Employee) 2016 (2015) (2014)



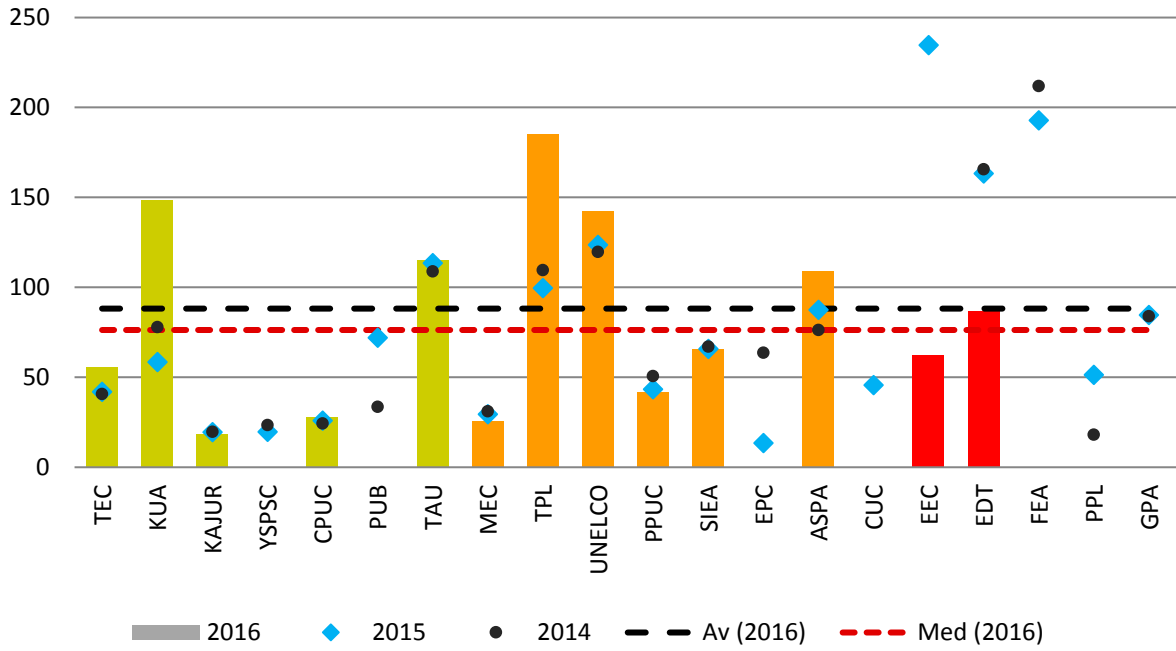
(ii) Lost Time Injury Frequency Rate

Figure 5.33: LTI Frequency Rate (Number of Incidents per Million Hours) 2016 (2015) (2014)



(iii) Overall Labour Productivity

Figure 5.34: Overall Labour Productivity 2016 (2015) (2014) (Customers per FTE Employee)



6. Appendix A

A: PPA Member Utilities in 2018

AMERICAN SAMOA POWER AUTHORITY

P O Box PPB, Airport Road, Pago Pago,
American Samoa 96799
Tel: + 1 (684) 2841234/1236 Fax: + 1 (684) 699 7067
Email: utum@aspower.com
Executive Director: Utu Abe Malae
Website: www.aspower.com

ELECTRIC POWER CORPORATION

P O Box 2011, Apia, Samoa
Tel: + (685) 65 400 Fax: + (685) 23 748
Email: leiat@epc.ws
CEO: Tologatā Galumalemana Lupematasila
Tagaloatele Tile Le'i'a Tuimalealiifano
Website: www.epc.ws

CHUUK PUBLIC UTILITY CORPORATION

P O Box 910, Weno, Chuuk, FSM 96942
Tel: + (691) 330 2400/ 2401
Email: mark.waite@cpuc.fm
CEO: Mr. Mark Waite
Website: www.cpuc.fm

ENERCAL (Societe Neo-Caledonienne D'Energie)

87,av. Du General De Gaulle, BP,
C1 98848 Noumea, New Caledonia
Tel: + (687) 250 250 Fax: + (687) 250 253
Email: jm.deveza@enercal.nc
CEO: Mr. Jean-Michel Deveza

COMMONWEALTH UTILITIES CORPORATION

P O Box 501220 CK, 3rd Floor, Joeten Dandan Building, Saipan,
MP 96950-1220
Tel: + 1 (670) 235-6090 Fax: + 1 (670) 235 5131
Email: gary.camacho@cucgov.net ; cc:bettydiaz@cucgov.org
CEO: Mr. Gary Camacho
Website: www.cucgov.org

FIJI ELECTRICITY AUTHORITY

Private Mail Bag, Suva, Fiji Islands
Tel: + (679) 322 4310 Fax: + (679) 331 1074
Email: hasmukh@fea.com.fj
CEO: Mr. Hasmukh Patel
Website: www.fea.com.fj

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BP 8021, Faaa, Tahiti, French Polynesia
Tel: + (689) 40867786 Fax: + (689) 83 44 39
Email: gregoire.de.chillaz@edt.engie.com
CEO: Mr. Grégoire de Chillaz,
Website: www.edt.pf (in French)

GUAM POWER AUTHORITY

P O Box 2977, Agana, Guam 96910
Tel: +1 (671) 648 3225/3180/3000
Fax: +1 (671) 648 3290
Email: gpagm@ite.net
CEO: Mr. John Benavente, General Manager
Website: www.guampowerauthority.com

ELECTRICITE ET EAU DE CALEDONIE

15 rue Jean Chalier PK4,
BP F3 – 98848 Noumea Cedex,
New Caledonia
Tel: + (687) 46 36 36 Fax: + (687) 46 35 10
Email: philippe.mehrenberger@eec.nc
CEO: Mr. Philippe Mehrenberger
Website: www.eec.nc (in French)

KOSRAE UTILITIES AUTHORITY

P O Box KUA, Kosrae, FSM 96944
Tel: + (691) 370 3799 / 3344 Fax: + (691) 370 3798
Email: kua@mail.fm
CEO: Mr. Fred Skilling

ELECTRICITE ET EAU DE WALLIS ET FUTUNA

BP 28 – 98 600 – Mata'Utu
Wallis and Futuna Islands
Tel: + (681) 72 1501 Fax: + (681) 72 2215
Email: filomena.filitika@eewf.engie.com
CEO: Mr. David Eyssartier

KWAJALEIN ATOLL JOINT UTILITY RESOURCES

P O Box 5819, Ebeye, Marshall Islands 96970
Tel: + (692) 329 3799/3798 Fax: + (692) 329 6722
Email: romeo.afred13@gmail.com
CEO: Mr. Romeo Alfredo

POWER BENCHMARKING/APPENDIX A

MARSHALLS ENERGY COMPANY

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Marshall Islands 96960
Tel: + (692) 625 3827/3828/3829/3507 Fax: + (692) 625 5886
Email: jack.chonggum@mecrmi.net
CEO: Mr. Jack Chong Gum
Website: www.mecrmi.net

PUBLIC UTILITIES BOARD

P O Box 443, Betio, Tarawa, Kiribati
Tel: + (686) 26 292 Fax: (686) 26 106
Email: ceo@pub.com.ki
CEO: Mr. Wayne Bready (Acting)

NAURU UTILITIES CORPORATION

Aiwo District, Nauru
Tel: + (674) 557 4038 Fax: + (674) 444 3521
Email: abraham.simpson@nuc.com.nr
CEO: Mr. Abraham Simpson (CEO)
Website: www.nuc.com.nr

SOLOMON POWER

P O Box 6, Honiara, Solomon Islands
Tel: + (677) 30 495 Fax: + (677) 39 472
Email: Pradip.Verma@solomonpower.com.sb
CEO: Mr. Pradip Verma
Website: www.solomonpower.com.sb

NIUE POWER CORPORATION

P O Box 29, Alofi, NIUE
Tel: + (683) 4119 Fax: + (683) 4385
Email: warren.halatau@mail.gov.nu
CEO: Mr. Warren Halatau, General Manager

TE APONGA UIRA O TUMU-TE-VAROVARO

P O Box 112, Rarotonga, Cook Islands
Tel: + (682) 20 054 Fax: + (682) 21 944
Email: atimoti@electricity.co.ck
CEO: Mr. Apii Timoti

PALAU PUBLIC UTILITIES CORPORATION

P O Box 1372, Koror, Palau 96940
Tel: + (680) 488 3870/72/77 Fax: + (680) 488 3878
Email: kji@ppuc.com
CEO: Mr. Kione J. Isechal

TONGA POWER LIMITED

P O Box 429, Nuku'alofa, Kingdom of Tonga
Tel: + (676) 27 390 Fax: + (676) 23 047
Email: rmathews@tongapower.to
CEO: Mr. Robert Mathews
www.tongapower.to

PNG POWER LTD

P O Box 1105, Boroko 111,
National Capital District, Papua New Guinea
Tel: + (675) 324 3111/3332 Fax: + (675) 3250 008/3877
Email: AOa@pngpower.com.pg
CEO: Mr. Alex Oa (Acting CEO)

TUVALU ELECTRICITY CORPORATION

P O Box 32, Funafuti, Tuvalu
Tel: + (688) 20 352/358 Fax: + (688) 20 351
Email: mafaluloto2@gmail.com
CEO: Mr. Mafalu Lotolua

POHNPEI UTILITIES CORPORATION

P O Box C, Kolonia, Pohnpei, FSM 96941
Tel: + (691) 320 2374 Fax: + (691) 320 2422
Email: pucagmpower@mail.fm or nanson@mpuc.fm
CEO: Mr. Nixon Anson (Acting CEO)
Website: www.puc.fm

UNELCO VANUATU LIMITED

P O Box 26, Port Vila, Vanuatu
Tel: + (678) 26 000 Fax: + (678) 25 011
Email: unelco@engie.com.
CEO: Mr. David Leferve
Website: www.unelco.engie.com

YAP STATE PUBLIC SERVICE CORPORATION

P O Box 667, Colonia, Yap, FSM
Tel: + (691) 350 4427 Fax: + (691) 350 4518 (Power plant)
Email: sapthiy@gmail.com or Executivesecretary@yapspsc.org
CEO: Mr. Faustino Yangmog

APPENDIX B: DATA TABLE

Table B.1: KPIs 2016 (Generation)

	1	2	3	4	5	6	7	8	9	10	11	12	13
Utility	Load Factor	Capacity Factor	Availability Factor	Generation Labour Productivity	Specific Fuel Oil Consumption (volume)	Specific Fuel Oil Consumption (weight)	Lube Oil Consumption	Forced Outage	Planned Outage	Generation O&M Costs	Power Station Usage	RE to Grid	IPP Energy Generation
	%	%	%	GWh/FTE gen employee	kWh/L	kWh/kg	kWh/L	%	%	US\$/MWh	%	%	%
ASPA	77.9	44.9	98.87	2.03	3.90	4.64	748	0.50	0.63	46.75	4.88	1.74	0.00
CPUC	67.0	29.4	100.00	0.79	3.74	4.50	873	0.00	0.00	50.53	6.34	2.38	0.00
CUC													
EDT	61.7	28.6	87.88	5.02	4.63	4.73	930		7.50	41.72	2.84	39.59	2.33
EEC	55.4	40.94	100	11.29	4.90	5.63	1023.53	0.0000	0.0000	13.87	1.24	9.65	94.13
EPC													
FEA	58.46			0.65		4.68	1271			5.88	1.205	57.12	0.07
GPA	76.143	31.523	87.132	5.398	3.547		2119.103	7.514	5.354	25.644	6.420	2.901	
KAJUR	91.210	49.648	99.715	0.441	3.690	4.100	1316.413	0.009	0.276	32.884	4.053	0.000	2.9
KJA	56.754	20.923	99.833	0.847	3.387		894.735	0.167	0.000	42.193	1.827	5.672	0.000
MEC	74.776	27.012	100.000	0.97	3.690	3.69	605.815	26.9	31	66.796	4.511	1.197	0.000
NUC	85.210	31.393	100.000		3.492	4.147	462.433	0.000	0.000	0.000	0.996	0.728	0.000
PPL													
PPUC	80.397	28.210	87.591	1.593	3.907	4.652	1332.596	7.602	4.807	0.000	3.616	0.871	0.000
PUB													
PUC	70.140	32.432	99.899		3.387	3.445	265.224	0.034	0.067	0.000	1.517	4.282	10.667
SP	69.843	46.643	99.604	1.299	4.280		1403.860	0.345	0.051	43.394	2.295	0.083	1.624
TAU	68.995	17.444	99.998	1.524	3.733		715.323	0.002	0.000	43.218	1.388	5.458	4.784
TEC	66.382	42.337	100.000	0.222	3.464		1501.920	0.000	0.000	222.222	16.160	22.268	0.000
TPL	62.883	41.988	99.996	0.614	4.418		1454.338	0.004	0.000	61.059	2.984	6.616	0.000
UNELCO	60.319	31.632	87.428	1.459	3.855	4.635	556.346	1.259	11.314	31.561	2.335	15.629	1.805
YSPSC													

Table B.2: KPIs 2016 (Generation, Distribution)

Utility	13a	13b	13c	13d	13e	14	18	19	20	21	22	23
	Distillate Generation %	Heavy Fuel Oil Generation %	Biofuel Generation %	Mixed Fuel Generation %	LNG Generation %	Enabling Framework for Private Sector Y/N	Network Delivery Losses %	Distribution Losses %	Customers per Distribution Employees	Distribution Reliability events/100km	Distribution Transformer Utilisation %	Distribution O&M Cost US\$/km
ASPA	98.261	0	0	0	0	Yes	8.530	8.530	259.411	6.414	22.046	20520.370
CPUC	97.620	0	0	0	0	Y/N	11.892	11.892	70.537	419.24	15.234	12066.57
CUC												
EDT	1.085	62.290	0.0	0.0	0.0	Yes	5.451	4.543	399.988	4.294	14.150	8038.990
EEC	0.000	0	0.000	0	0	Yes	3.252	3.252	242.169	16.74	16.237	18543.94
EPC												
FEA	9.530	33.368	0	0	0	Yes	8.775	-60.261	909.367		14.870	1066.277
GPA	18.362	71.848	0	0	0	Yes	4.870	4.737	336.436	1.426	18.166	4464.646
KAJUR	0.000	100.000	0	0	0	No	27.045	27.045	132.107	27.273	20.755	7912.727
KUA	94.343	0	0	0	0	No	9.152	9.152	135.154	44.186	4.339	5634.997
MEC	98.803	0	0	0	0	No	10.086	10.086	120.65	27.778	13.06	22426.917
NUC	99.272	0	0	0	0		100.000	100.00				
PPL												
PPUC	99.129	0	0	0	0	No	12.925	12.925	158.412	20.000	32.388	0.000
PUB												
PUC	74.384	0	0	0	Yes	Yes	10.813	10.813	132.948	125.67	51.153	0.00
SP	88.277	0	0	0	0	No	30.363	30.36	134.772	0.738	10.157	143.533
TAU	89.758	0	0	0	0	Yes	6.662	6.662	356.625	1.207	20.290	10968.117
TEC	77.732	0	0	0	0	No	4.286	4.286	1427.250	5.000	16.009	2876.658
TPL	93.105	0	0	0	0	Yes	8.482	8.482	222.251	168.421	15.191	4450.842
UNELCO	84.370	0	3.779	0	0	No	10.337	10.337	394.893	9.820	15.675	2969.550
YSPSC												

POWER BENCHMARKING | Appendix B

Table B.3: KPIs 2016 (Generation and Distribution SAIDI SAIFI)

Utility	24a	24b	25a	25b	25c	25d	25e	25f	25g	25h	25i	25j	25k
	Dist Related SAIDI (Unplanned) mins per customer	Dist Related SAIDI (Planned) mins per customer	Dist SAIFI (Total) events per customer	Dist Related SAIFI (Unplanned) events per customer	Dist Related SAIFI (Planned) events per customer	Gen SAIDI (Total) mins per customer	Gen Related SAIDI (Unplanned) mins per customer	Gen Related SAIDI (Planned) mins per customer	Gen SAIFI (Total) events per customer	Gen Related SAIFI (Unplanned) events per customer	Gen Related SAIFI (Planned) events per customer	Total SAIDI (Gen and Dist) mins per customer	Total SAIFI (Gen and Dist) events per customer
ASPA	68.588	0.000	0.971	0.971	0.000	184.056	184.056	0.000	2.326	2.326	0.000	252.645	3.297
CPUC	213.505	127.460	40.585	28.659	11.926	2.278	1.919	0.359	23.646	21.590	2.056	343.243	64.232
CUC													
EDT	68.209	233.759	2.373	1.406	0.967	46.748	46.748	0.000	1.831	1.831	0.000	348.716	4.204
EEC	0.001	0.001	2.413	1.818	0.595	0.000	0.000	0.000	0.000	0.000	0.000	0.002	2.413
EPC													
FEA	0.003	0.013	14.249	5.251	8.998	0.000	1.301	0.000	1.301	1.301	0.000	0.016	15.549
GPA	42.543	9.459	1.774	0.887	0.887	638.583	638.583	0.000	1.774	0.887	0.887	690.585	3.549
KAJUR	63.076	8.010	5.006	3.004	2.002	2170.125	72.588	2097.537	23.028	8.510	14.518	2241.211	28.034
KUA	447.801	263.644	13.026	11.431	1.595	2906.923	2906.923	0.000	6.510	6.510	0.000	3618.368	19.536
MEC	1025.286	315.525	6.376	5.504	0.872	4175.229	2886.358	1288.872	10.578	7.197	3.381	5516.040	16.955
NUC	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PPL													
PPUC	0.059	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.072	0.000
PUB													
PUC	0.001	0.000	1.009	0.504	0.504	0.004	0.004	0.000	1.009	0.673	0.336	0.005	2.018
SP	31.301	24.266	11.581	6.581	5.000	590.789	588.742	2.047	26.801	24.137	2.663	646.357	38.381
TAU	2.846	0.000	0.098	0.098	0.000	62.087	62.087	0.000	1.446	1.446	0.000	64.933	1.545
TEC	0.106	0.001	0.330	0.267	0.063	0.044	0.044	0.000	1.000	1.000	0.000	0.152	1.330
TPL	0.019	0.048	1.562	0.826	0.737	0.015	0.013	0.002	1.786	1.013	0.773	0.081	3.348
UNELCO	85.088	228.687	4.066	1.718	2.348	35.692	35.692	0.000	3.625	3.625	0.000	349.467	7.691
YSPSC													

POWER BENCHMARKING | Appendix B

Table B.4: KPIs 2015 (DSM, HR and Safety, Customer)

Utility	26	27	28	29	30	31	32	33	34	35	36a	36b	36c	36d	36e	37	38
	DSM Initiatives	DSM Budget	DSM FTE Empl	DSM MWh Savings	Power Quality Standards	Lost Time Injury Duration	Lost Time Injury Freq Rate	Labour Productivity	Service Coverage	Productive Electricity Usage	Lifeline Tariff Usage	Domestic Usage	Commercial Usage	Industrial Usage	Other Usage	Customer Unbilled Electricity	Self-Regulated or Externally Regulated
	USD	FTE empl	MWh		days	injuries per million hrs worked	customers/FTE empl	%	%	%	%	%	%	%	%	%	self / ext
ASPA	Yes	0	0.000	0	None	0.241	14.564	86.419	108.712	70.192	0.000	30.840	26.793	21.025	21.341	0.000	self
CPUC	No	0	0.000	0	None	0.000	0.000	27.764	22.352	73.032	0.000	21.947	53.799	0.000	19.232	4.677	self
CUC																	externally
EDT	Yes	0	0.002	No	None	0.128	5.947	170.150	86.882	80.320	9.809	26.526	16.545	45.847	1.242	0.030	externally
EEC	Yes	92987	0.001	None	EN 50160	0.046	4.702	234.659	62.466	68.067	0.000	36.399	24.709	37.593	0.000	1.291	externally
EPC																	externally
FEA	No	0	0.000	0	0.000	0.126	27.735	186.384	#DIV/0!	77.816	0.813	27.194	46.230	25.085	1.491	0.000	self
GPA	Yes	1873559	24.413	0	None	0.513	5.617	92.141	#DIV/0!	69.065	14.191	30.935	17.245	19.666	32.154	0.000	
KAJUR	Yes	0	0.000	0	None	0.000	0.000	18.386	98.179	31.954	0.000	63.865	31.605	0.000	0.349	4.181	self
KUA	Yes	0	0.000	0	KUA	0.000	0.000	148.489	111.563	60.372	0.000	38.512	30.571	5.144	24.657	1.116	self
MEC	No	0	0.000	0	None	0.21	13.18	25.75	84.509	51.636	0.000	49.228	35.289	0.000	15.480	0.000	self
NUC	Yes	0	0.001	0	ANZS	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
PPL																	externally
PPUC	Yes	25935	0.002	0	JIS,NEC	0.000	0.000	41.765	98.558	58.552	18.126	#VALUE!	35.536	18.358	4.658	0.000	self
PUB																	self
PUC	Yes	0	0.001	0	0.000	0.686	12500.000	#DIV/0!	65.714	20.834	0.000	4.360	11.642	9.192	0.000	0.000	self
SP	No	0	0.000	0	AS NZ Standard	0.013	4.283	65.797	0.854	0.034	0.000	24.413	52.488	18.221	16.627	0.001	self
TAU	Yes	62734	0.004	0	AUS/NZ TPL Standard	0.000	0.000	114.967	100.000	65.463	10.270	34.537	36.907	28.556	0.000	0.000	externally
TEC	Yes	0	0.001	No	AUS/NZ	0.000	0.000	55.611	97.996	66.940	14.454	44.599	27.872	0.000	27.563	0.000	self
TPL	Yes	0	0.002	0	TPL Standard	0.000	0.000	185.208	87.084	63.443	0.000	45.000	55.000	0.000	0.000	9.342	externally
UNELCO	Yes	0	0.000	0	None	0.000	0.000	142.313	29.236	69.965	9.250	27.646	26.337	41.527	0.337	1.125	externally
YSPSC																	

Table B.5: KPIs 2015(Transmission)

Utility	15	16	17a	17b	17c	17d	17e	17f	
	Transmission Losses	Transmission Reliability	Trans SAIDI (planned)	Trans SAIDI (unplanned)	Trans SAIDI Total	Trans SAIFI (unplanned)	Trans SAIFI (planned)	Trans. SAIFI Total	Total SAIDI (Gen Dist Tran)
	%	outage/s100km	min per cust	min per cust	min per cust	events/cust	events/cust	events/cust	min per cust
EDT	1.0	0.84	0.0	#DIV/0!					
FEA	43.0768	#DIV/0!	0	#DIV/0!					
GPA	0.1	32.3	567.1	94.4					
PPL									

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Table B.6: KPIs 2016 (Financial and Utility Cost Breakdown)

Utility	Financial										Utility Cost Breakdown									
	39	40	41	42	43	44	45	46.1	46.2	46.3	46.4	46.5	46.6	46.7	46.8	46.9	46.1	46.11	46.12	
	Operating Ratio	Debt to Equity Ratio	Rate of Return on Assets	Return on Equity	Current Ratio	Debtor Days	Average Supply Cost	Fuel and Lube Oil	Fuel Duty	Gen O&M	Gen Labour	Gen Deprec	T&D O&M	T&D Labour	T&D Deprec	Other O/Hs	Other Deprec	Other Taxes	Other Misc	
	%	%	%		days	US\$/kWh	%	%	%	%	%	%	%	%	%	%	%	%	%	
ASPA	-119.20	19.6751	-10.24	-6.193	398.2	-111.4	31	51.4	0	7.2	9.0	5.7	6.6	4.2	2.8	7.5	0.7	1.7	3.2	
CPUC	92.32	22.6	38.8	1.97	146.6	28.4	38	53.8	0	8.8	5.4	5.4	3.8	5.6	4.3	3.4	2.5	0.0	8.1	
CUC																				
EDT	97.4	5.4	5.3	20.8	15.7	76.4	31	30.2	0	7.0	10.2	11.4	3.3	7.3	-0.3	8.2	0.0	8.6	14.3	
EEC	0.97	0.02	0.14	0.09	91.7	66.4	29.956	7.7	0	0.75	0.88	1.5	6.0	56.9	14.8	5.5	6.0	0	0	
EPC																				
FEA	76.4	39.2	11.0	6.6	299.1	41.9	26.813	42.6	0.0	4.3	1.2	10.2	7.3	2.3	6.4	6.0	2.0	0	17.60	
GPA	86.8	88.9	7.5	-9.1	135.5	74.2	15	52.0	0	5.7	3.4	8.8	3.8	2.7	4.4	4.8	2.5	0.0	11.9	
KAJUR	111.9		-17.1		70.4	38.6	39	70.6	0.1	0.82	13.1	1.03	0.15	2.1	1.8	9.3	0.84	0.1	0	
KUA	106.9	0.00	5.7	4.4	671.9	24.4	45	47.7	0	5.3	3.9	3.9	10.7	4.2	7.6	9.4	1.0	0	6.2	
MEC	84.5	70.0	24.1302	61.983	120.0	127.7	30	41.6	0.0	14.2	7.7	5.5	3.6	3.6	0.4	9.7	1.8	1.9	10.1	
NUC	0.0				1630.6	193.8		100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PPL																				
PPUC																				
PUB																				
PUC																				
SP	0.85	0.03	0.2	0.1	771.7	39.6	74	41.3	0.0	4.8	2.8	5.7	1.5	1.8	2.0	8.8	3.0	0.0	28.3	
TAU	66.8	0.0	26.6	11.4	534.4	73.6	41	47.2	0.0	4.1	5.5	4.6	3.9	3.9	5.4	10.0	1.1	0.0	14.3	
TEC	178.1	27.02	-75.5	156.45	109.2	111.1	67	20.6	0.0	21.2	3.1	20.1	0.1	0.4	1.1	6.1	1.1	0.1	26.0	
TPL	102.6	26.7	6.2	9.4	93.1	52.4	84	40.8	0.0	6.5	2.8	3.1	0.5	4.6	9.5	5.9	5.5	0.0	20.7	
UNELCO	92.0	13.8	2.1	8.3	112.4	64.9	36	33.9	7.7	5.9	1.8	9.6	2.4	0.9	4.8	8.4	3.4	0.2	21.0	
YSPSC																				

Appendix C. Currency Conversion Table

Table C.1: Currency Conversion Table for 2015 and 2016 Data

Pacific Utilities	Country	Local Currency	2015				2016			
			Benchmarking Period Start	Benchmarking Period End	Multiplier to Convert to USD (Ave. Rate)	End Fiscal Year Conversion	Benchmarking Period Start	Benchmarking Period End	Multiplier to Convert to USD (Ave. Rate)	End Fiscal Year Conversion
ASPA	American Samoa	USD	1-Oct-14	30-Sep-15	1	1	1-Oct-15	30-Sep-16	1	1
CPUC	Chuuk, FSM	USD	1-Oct-14	30-Sep-15	1	1	1-Oct-15	30-Sep-16	1	1
CUC	Saipan, Northern Marianas	USD	1-Oct-14	30-Sep-15	1	1	1-Oct-15	30-Sep-16	1	1
EDT	French Polynesia	XPF	1-Jan-15	31-Dec-15	0.00928	0.00917	1-Jan-16	31-Dec-16	0.009259	0.008825
EEC	New Caledonia	XPF	1-Jan-15	31-Dec-15	0.00928	0.00917	1-Jan-16	31-Dec-16	0.009259	0.008825
EEWF	Wallis and Fortuna	XPF	1-Jan-15	31-Dec-15	0.00928	0.00917	1-Jan-16	31-Dec-16	0.009259	0.008825
ENERCAL	New Caledonia	XPF	1-Jan-15	31-Dec-15	0.00928	0.00917	1-Jan-16	31-Dec-16	0.00928	0.008825
EPC	Samoa	WST	1-Jul-14	30-Jun-15	0.4237	0.4237	1-Jul-15	30-Jun-16	0.421455	0.388319
FEA	Fiji	FJD	1-Jan-15	31-Dec-15	0.4932	0.46187	1-Jan-16	31-Dec-16	0.477356	0.4725
GPA	Guam	USD	1-Oct-14	30-Sep-15	1	1	1-Oct-15	30-Sep-16	1	1
KAJUR	Kwajalein Atoll, Marshall Islands	USD	1-Oct-14	30-Sep-15	1	1	1-Oct-15	30-Sep-16	1	1
KUA	Kosrae, FSM	USD	1-Oct-14	30-Sep-15	1	1	1-Oct-15	30-Sep-16	1	1
MEC	Marshall Islands	USD	1-Oct-14	30-Sep-15	1	1	1-Oct-15	30-Sep-16	1	1
NPC	Niue	NZD	1-Jul-14	30-Jun-15	0.7777	0.68295	1-Jul-15	30-Jun-16	0.7777	0.68295
NUC	Nauru	AUD	1-Jul-14	30-Jun-15	0.83685	0.7653	1-Jul-15	30-Jun-16	0.72825	0.74409
PPL	Papua New Guinea	PGK	1-Jan-15	31-Dec-15	0.3533	0.3259	1-Jan-16	31-Dec-16	0.313942	0.306448
PPUC	Palau	USD	1-Oct-14	30-Sep-15	1	1	1-Oct-15	30-Sep-16	1	1
PUB	Kiribai	AUD	1-Jan-14	31-Dec-15	0.8368	0.7653	1-Jan-15	31-Dec-16	0.743623	0.74409
PUC	Pohnpei, FSM	USD	1-Oct-14	30-Sep-15	1	1	1-Oct-15	30-Sep-16	1	1
SP	Solomon Islands	SBD	1-Jan-15	31-Dec-15	0.12642	0.12403	1-Jan-16	31-Dec-16	0.125486	0.1224
TAU	Cook Islands	NZD	1-Jul-14	30-Jun-15	0.7777	0.68295	1-Jul-15	30-Jun-16	0.667932	0.71088
TEC	Tuvalu	AUD	1-Jan-15	31-Dec-15	0.83685	0.7653	1-Jan-16	31-Dec-16	0.743623	0.74409
TPL	Tonga	TOP	1-Jul-14	30-Jun-15	0.50125	0.4616	1-Jul-15	30-Jun-16	0.440377	0.441716
UNELCO	Vanuatu	VUV	1-Jan-15	31-Dec-15	0.0093	0.00904	1-Jan-16	31-Dec-16	0.009203	0.009348
YSPSC	Yap, FSM	USD	1-Oct-14	30-Sep-15	1	1	1-Oct-15	30-Sep-16	1	1

Appendix D: Electricity Tariff Tables

Table D.1: Electricity Tariff Table¹ (Local Currency)

Pacific Utilities		TOTAL COST TO CONSUMER FOR SET kWh/mth, incl base charge, taxes, etc (IN LOCAL CURRENCY)													
		DOMESTIC / RESIDENTIAL							COMMERCIAL / BUSINESS						
Local Currency	Conversion Factor for each currency	50	100	200	500	1000	2000	3000	10000	1000	3000	10000	50000		
ASPA	USD	19.47	32.94	59.87	140.68	275.36	544.72	814.08	2699.60	278.46	845.38	2794.60	13933.00		
CPUC	USD	23.57	47.13	94.26	235.65	471.30	942.60	1413.90	4713.00	501.40	1504.20	5014.00	25070.00		
CUC	USD														
EDT	XPF	1802.00	2993.00	5682.00	21509.00	45306.00	94263.00	147328.00	392728.00	48924.00	135811.00	392728.00	1802672.00		
EEC	XPF	3660.00	4846.00	7568.00	13931.00	26909.00	48589.00	92878.00	179172.00	15355.00	62524.00	160102.00	2138718.00		
EPC	WST														
FEA	FJD	8.60	21.18	54.28	153.58	319.08	650.08	1312.08	3629.08	399.00	1197.00	3990.00	20615.00		
GPA	USD	3.48	6.96	13.91	34.78	46.34	1007.69	2267.31	25192.30	166.07	378.23	1120.79	5363.99		
KAJUR	USD	17.30	34.60	69.20	173.00	346.00	692.00	1038.00	3460.00	406.00	1218.00	4060.00	20300.00		
KUA	USD	21.69	43.09	89.89	230.29	464.29	942.29	1420.29	4766.29	477.29	1453.29	4869.29	23989.29		
MEC	USD	17.30	34.60	69.20	173.00	346.00	692.00	1038.00	3460.00	406.00	1218.00	4060.00	20300.00		
NPC	NZD	40.00	65.00	125.00	325.00	675.00	1375.00	2075.00	6975.00						
NUC	AUD	10.00	20.00	40.00	130.00	305.00	655.00	1005.00	3455.00	700.00	2100.00	7000.00	35000.00		
PPL	PGK														
PPUC	USD	18.20	33.40	67.50	180.90	394.40	821.40	1248.40	4237.40	438.00	1292.00	4281.00	21361.00		
PUB	AUD														
PUC	USD	28.53	53.05	102.10	249.25	494.50	985.00	1475.50	4909.00	490.50	1471.50	4905.00	24525.00		
SP	SBD	323.43	646.86	1293.72	3234.30	6468.60	12937.20	19405.80	64686.00	6953.00	20859.00	69530.00	347650.00		
TAU	NZD	54.00	91.60	245.60	403.60	798.60	1588.60	2378.60	7908.60	790.00	2330.00	7720.00	38520.00		
TEC	AUD	15.00	34.50	90.50	258.50	538.50	1098.50	1658.50	5578.50	560.00	1680.00	5600.00	28000.00		
TPL	TOP	39.34	78.68	157.36	393.40	786.80	1573.60	2360.40	7868.00	786.80	2360.40	7868.00	39340.00		
UNELCO	VUV	766.00	3099.60	15001.80	55546.80	123121.80	258271.80	393421.80	1339471.80	39190.00	117570.00	391900.00	1959500.00		
YSPSC	USD														

¹Tariff review was carried out by PPA.

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Table D.2: Electricity Tariff Table (USD)

TOTAL COST TO CONSUMER FOR SET kWhs/mth, incl base charge, taxes,etc (CONVERTED TO USD)														
Conv Factor to USD	DOMESTIC / RESIDENTIAL							COMMERCIAL / BUSINESS						
	50.00	100.00	200.00	500.00	1000.00	2000.00	3000.00	3000+	1,000	3,000	10,000	50,000		
1	19.47	32.94	59.87	140.68	275.36	544.72	814.08	2699.60	278	845	2795	13933		
1	23.57	47.13	94.26	235.65	471.30	942.60	1413.90	4713.00	501	1504	5014	25070		
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0	0		
0.008825	15.90	26.41	50.14	189.82	399.83	831.87	1300.17	3465.82	432	1199	3466	15909		
0.008825	32.30	42.77	66.79	122.94	237.47	428.80	819.65	1581.19	136	552	1413	18874		
0.388319	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0	0		
0.4725	4.06	10.01	25.64	72.56	150.76	307.16	619.96	1714.74	189	566	1885	9741		
1	3.48	6.96	13.91	34.78	46.34	1007.69	2287.31	25192.30	166	378	1121	5364		
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0	0		
1	17.30	34.60	69.20	173.00	346.00	692.00	1038.00	3460.00	406	1218	4060	20300		
1	21.69	43.09	89.89	230.29	464.29	942.29	1420.29	4766.29	477	1453	4869	23989		
1	17.30	34.60	69.20	173.00	346.00	692.00	1038.00	3460.00	406	1218	4060	20300		
0.68295	27.32	44.39	85.37	221.96	460.99	939.06	1417.12	4763.58	0	0	0	0		
0.74409	7.44	14.88	29.76	96.73	226.95	487.38	747.81	2570.83	521	1563	5209	26043		
0.306448	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0	0		
1	18.20	33.40	67.50	180.90	394.40	821.40	1248.40	4237.40	438	1292	4281	21361		
0.74409	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0	0		
1	28.53	53.05	102.10	249.25	494.50	985.00	1475.50	4909.00	491	1472	4905	24525		
0.1224	39.59	79.18	158.35	395.88	791.76	1583.51	2375.27	7917.57	851	2553	8510	42552		
0.71088	38.39	65.12	174.59	286.91	567.71	1129.30	1690.90	5622.07	562	1656	5488	27383		
0.74409	11.16	25.67	67.34	192.35	400.69	817.38	1234.07	4150.91	417	1250	4167	20835		
0.441716	17.38	34.75	69.51	173.77	347.54	695.08	1042.63	3475.42	348	1043	3475	17377		
0.009348	7.16	28.98	140.24	519.25	1150.94	2414.32	3677.71	366.35	366	1099	3663	18317		
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0	0		

