Peru Enel Américas' 2018 Analyst Update Meeting

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Country Manager Enel Perú



Enel Perú Positioning



Enel Américas in Peru, our assets



Enel Dx Perú # 1	 1st distribution company. 20% market share. 1.4 million customers. 7,937 GWh sales 2017. 1 240 MW peak demand 2017.
Enel Gx +	 2nd generation company. 15% market share.
Enel Gx Piura	 2,045 MW (61 % thermal; 39% hydro).
# 2	 7.5 TWh production 2017.

2017(US\$ m)	Dx	Gx	Total
Ebitda	220	370	590
Capex	130	362	492
Employees	588	364	952



Market Position Enel Peru 2017

Capacity Market



17%

20%



Market evolution in Peru



Enel Gx Perú free market supply contracts

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Free Market Renovations and new opportunities

Renovations and new opportunities

Customer	Renewal date	Capacity MW	Energy TWh/year
VOTORANTIM-METAIS	2020	242	1.7
LINDLEY	2021	17	0.8
CAMPOSOL	2021	21	0.7
TOTAL		280	3.2
Course Opinerste			

Source. Osinergmin

New mining projects, future tenders expected

Project	COD	Capacity MW	Energy TWh/año
AMPLIACIÓN TOROMOCHO	2020	200	1.4
SAN GABRIEL	2021	70	0.5
PAMPA DE PONGO	2022	50	0.4
PUKAQAQA	2022	63	0.4
LOS CHANCAS	2022	100	0.7
QUELLAVECO	2022	140	1.0
ZAFRANAL	2023	91	0.6
HAQUIRA	2024	110	0.8
TOTAL		824	5.8
Source, MINEM			

2019

2020

2018

Enel Dx Perú supply contracts for free market



Free market: power contract vs demand projection (MW)









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Main	business	lines

	0 0	Segment: Target 2018:	B2B and B2G MUSD 2.2 (Gross Margin)
	0	Portfolio:	Infrastructure projects (power increases, lighting), infrastructure maintenance, energy efficiency
			(energy consumption management).
e-Industries	0	Channels:	Direct sales, commercial promotions, fairs.

	0 0	Segment: Target 2018:	B2C MEUR 1.5 (Gross Margin)
	0	Portfolio:	Home appliances (refrigerator, heater, stoves), credits, third party billing services (water, gas, retail), micro
e-Home	0	Sales channels:	insurance (<i>life, burial, accident, dental</i>) Commercial offices, direct sales, call center, digital sales

	0	Project:	2 electric Buses (12 meters) on manufacturing
	0	Objective:	Public transport demonstrative project
e-Mobility	0	Operation date:	March 2019 for 2 years

Digitalization



Digitalization programs

Overview of relevant programs 2018-22



	Progra	ms	Main ii	nitiatives
	Customer Journey	Rethinking of customer experience	There is no powerI want to be known	 I have to pay my bill I am interested in your offer Info on my billing
Customer	CRM Platform	Unique solution for all markets	Emergency managementCustomer Care	SalesMobile, App & One hub
	DGPlant	Operation and maintenance digitalization in power plants	 Heat Rate Optimization Advanced Process Control Predictive maintenance 	 Digital Worker Transf. Automation large hydro plants Local Control Room
	👎 🔮 Big Data / IOT	Advanced IoT sensors and sophisticated analytical models	Predictive maintenanceLosses reduction	Data gathering PiSCADA systems security
Asset	BEAT	New global platform for smart meter2.0	Automatic Meter MgmtMeter data Mgmt	 Work-force Mgmt
	C E4E	Integration and standardization AFCP & Business Line Processes	 Procesos Administración, Finanzas, Controling & Procurement 	 Procesos de Negocio: GEN, I&N, Market y ENEL X
	🔮 Network Digital Twi	MT Network Digitalization	 Digitalización de la infraestrumedia tensión 	ictura de redes eléctricas en
People	🛞 Employee Journey	Employee as internal clients to unlock their full potential	I am interested in this jobI am a new hire	I am travelling for jobGet to now the organization













MV remote control system

Medium Voltage Network







Main objective: SAIDI reduction

- No manpower requirement.
- Immediate failure identification and isolation.
- Minimize number of affected customers.
- Shorter system recuperation.



MV Network digital twin



Goals

- Verify safety distances
- Identify electrocution risks for population



Technology

- Lidar system on a vehicle
- 360 ° HD video camera
- Position sensors (GPS, GNSS, IMU, odometers, etc.)



3D network digitizing benefits

- 3D modeling of MV overhead lines
- Detection of Security Distances vs other infrastructures
- Detection and identification of deficiencies in the network and construction of digital data for analysis

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Deadlines

July 2018 Digitalization of MV Overhead lines

December 2018 Image detection of LV infrastructure

Investment

427 kUSD

Sustainability





Total beneficiaries ODS Peru = 221,685

Sustainability Challenges





Financial Focus



Financial Focus on Peru - MUSD





Net Income



EBITDA and EBITDA Margin





Financial Gross Capex - MUSD

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Hot Topics



Hot Topics Peru

Gasoducto Sur Peruano pipeline delay

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Marginal costs USD/MWh



Higher production costs due to distillate consumption





Hot Topics Peru

Camisea Gas Plant maintenance

- Pluspetrol has announced 23 days of Camisea gas interruption (from 26th july to 17th august).
- 91% of the thermal installed capacity will be affected.
- Estimated impact of 21 MUSD due to spot prices increase and operational costs (diesel).







Peruvian regulatory framework

Tatiana Lozada

Head of Regulation Enel Perú

Market structure



Strong Gx competition with more than 70 operators

GENERATION (Gx)	TRANSMISSION (Tx)	DISTRIBUTION (Dx)
 Competitive Market. Spot market marginal costs. Centralized dispatch. PPA's for distribution: regulated price or LT auctions. PPAs for free clients: negotiated prices. 	 Natural monopoly. Regulated business. Centralized planning (Ministerio Energía y Minas). Auction processes to assign standardized BOOT contracts 	 Natural monopoly. Regulated business, VAD (Valor Agregado de Distribución) is approved every 4 years. Pass-through of Tx and Gx costs. Residential clients with less than 100 kWh are subsidized. Dx is responsible of the street lighting.



Customers 2017 – regulated and free market



Strong consolidated free market

Energy Sales 2017



Energy	Free Market (TWh)	Regulated Market (TWh)	Total (TWh)
Generators	21.3	0	21.3
Distributors	3.5	19.1	22.6
TOTAL	24.8	19.1	43.9
Share	56.5%	43.5%	100%

# customers	Free Market (customers)	Regulated Market (customers)	Total Customers
Generators	706	0	706
Distributors	640	7.2 million	7.2 million
TOTAL	1346	7.2 million	7.2 million
Share	0.02%	99.98%	100%

Source : Osinergmin

Spot Market fundamentals



- Marginalist market based on variable costs.
- RENs first to be dispatched.
- GN Thermal Generators declare GN prices once a year.
- Audited variable costs for other technologies.





Spot market transfers (TWh)

Spot Market access to large users and distributors



Large customers (>10 MW) can purchase energy to cover up to 10% of their demand

Distributors can purchase up to 10% of their free market demand.



Distribution Regulatory model



Distribution is a stable & profitable activity with high growth potential



Distribution Regulation (VAD): remuneration based on due investments for a model company, tariff studies approved by the Regulator every 4 years. Since 1994, four tariff processes have been done. New tariff setting process will end in October 2018.

12% discount rate since 1992 (real before taxes)



Sub-transmission Regulation: HV and MV grid development based on 4 years investments plan previously approved by regulator.

New VAD process



New model to fix next 4 years VAD considering ideally each company gives a better chance to defend our proposal.					
Potential upsides	Service quality: up to 5% additional MT VAD for SAIFI-SAIDI improvement. Smart meters: investments to replace a 100% of the analogic meters in 8 years time. Innovation: up to 1% VAD to incentivate projects improving service quality.				
PTU (workers 5% utilities right)	Historically recognized as a cost, has been refused on 2013-18 period. Legal actions ongoing for that period.				

Real Enel Perú data figures delivered	Enel Perú VAD preliminary study to be pre <mark>s</mark> ented	Regulator comments to be discussed	Enel Perú VAD final version to be summited	Regulator's prepublication	Enel Perú comments	Final VAD publication	New VAD coming into force on 1 st Nov 2018
28.02.18	02.05.18	18.06.18	03.07.18	03.08.18	17.09.18	16.10.18	

Regulatory Discussion

Over Capacity & Spot prices



Regulatory Discussion

Natural Gas Price Declaration



- Spot prices reduced since 2015 due to overcapacity, demand slowdown and gas costs rigidities.
- Generators with net selling position in the spot, initiated a campaign to intervene mechanism to fix a floor price of 27 USD/MWh (fix and variable costs).
- New regulation adjustment in variable cost considerations increased 4 USD/MWh on average. Enel Perú purchase position is 2TWh, with a budget assumptions of 15 USD/MWh.



• Congress is analyzing the possibility of fixing a new mechanism.

Regulatory Discussion

Overcontracted distributors

Diagnosis

- Due to system overcapacity, demand slowdown and regulated customers migration to the free market.
- Impact up to 2021 (LT contracts ending)
- Enel Perú position in generation market reduces impacts due to capacity offset with system operator.

Overcontracted impact in Enel Perú (US\$ m)			
11.0 11.9 10.9 10.6 10.2	Company	Overcontracted [MW]	
and the state of t	Enel Dx	210	
-4.0 -4.9 -4.8 -4.3 -4.0	Luz del Sur	350	
-15.0 -16.8 -15.7 -14.9 -14.2 2017 2018 2019 2020 2021	State Dx	256	
■ Enel Dx ■ Enel Gx ■ Enel	TOTAL	816	

Action Plan

• Enel Perú is promoting a new regulatory framework to reduce impacts in Dx by extending existing Gx PPAs.

1,500

Enel Dx: overcontracted capacity vs Demand (MW)



Next regulatory discussion Electrical Discount Rate



Discount rate value	Legal Framework	Adjustment mechanism			
12%	Ley de Concesiones Eléctricas	Osinergmin to propose based on an specialized external opinion.			
Since 1992	(Art. 79°)	 Ministry of Energy to approve by a "Resolución Ministerial". Modification range: no bigger than 2%. 			

Yearly impact: 10 MUSD/100bp.

Current Situation

- > Osinergmin commissioned to Mercados Energéticos S.A. a consultancy to evaluate the rate.
- > Low risk for the change because of strong investments needed in Dx Industry to improve quality service and expansion.
- > Common actions among different operators ongoing.

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