Mindanao Power Development Advocacy & MPMC Updates

DOE Briefing on Energy Investments for Region X LGUs
N Hotel, Cagayan de Oro City
October 11, 2013

MinDA

The Mindanao Power Situation

Mindanao Power Situation

POWER SITUATION OUTLOOK

(as of 6:00 AM, Friday, October 11, 2013)

(MW)	LUZ	VIS	MIN
System Capacity	8137	1547	1218
System Peak	7472	1365	1251
Reserve	665	224	-33

Source: NGCP

Mindanao Power Situation

Mindanao Net System Reserve
(for Thursday, October 10, 2013 - as of 10:01:00 AM Thursday, October 10, 2013)

Time	1am	2am	3am	4am	5am	6am	7am	8am	9am	10am	11am	12nn
NPC Cap	1064	1064	1064	1064	1064	1064	1064	1064	1064	1064	1064	1064
Sys. Load	877	845	820	818	857	867	823	914	1049	1123	1157	1142
Basic Op. Res.	35	34	33	33	34	35	33	37	42	45	46	46
Reg. Res.	35	34	33	33	34	35	33	37	42	45	46	46
Con. Res.	100	100	100	83	101	100	79	79	92	92	92	102
Net Sys. Res	52	85	111	130	72	62	129	35	-27	-104	-139	-124

Time	1pm	2pm	3pm	4pm	5pm	6pm	7pm	8pm	9pm	10pm	11pm	12mn
NPC Cap.	1064	1064	1064	1064	1064	1064	1064	1064	1064	1064	1064	1064
Sys. Load	1146	1181	1146	1155	1117	1208	1251	1138	1102	1036	955	883
Basic Op. Res.	46	47	46	46	45	48	50	46	44	41	38	35
Reg. Res.	46	47	46	46	45	48	50	46	44	41	38	35
Con. Res.	102	102	102	102	102	102	102	102	101	101	101	101
Net Sys. Res.	-128	-164	-128	-137	-98	-192	-237	-119	-82	-13	71	45

Hourly projection of Mindanao demand during peak period, 9am to 10pm (load curve) indicating supply deficits

Source: NGCP

The State of Mindanao Power

- A serious power deficit persists; supply unable to meet demand especially when several plant units go on Preventive Maintenance Shutdown
- Requiring at least 500MW of new capacity by 2016, another 500MW by 2020, and 1,600MW by 2030 (4.7% annual growth, DOE Philippine Energy Plan)
- Outlook for cheap hydro (Agus-Pulangi) compromised by siltation of river systems and dams
- Share of fossil fuels in the energy mix is thus rising, and yet to fully tap clean, renewable and indigenous power sources (to minimize foreign exchange and environmental costs)
- Need to address surging electricity consumption growth, and substantial losses due to systems loss

Mindanao Power Scenario 2013:

1) Summer months = low water levels = reduced APHEC output; Scheduled Preventive Maintenance Shutdown (PMS)

2) Deficit could persist with around 300MW if no immediate measures taken

3) Situation expected to improve only until 2015 when committed projects come on stream.

So, if we don't do anything, we might as well brace for two years of possible rotating brownouts, 4-8 hours in areas with no embedded/additional contracted capacities.

Mindanao Supply-Demand Outlook

What's the extent of rotating brownouts last summer months?

(As a point of reference, March 2013 was the last recorded period of major supply shortfall resulting to severe rotating brownouts in parts of Mindanao)

Rotating Brownouts per EC Customers last March 2013

EC NAME	2012 Average Brownouts (in Hours)	2013 (in Hours)
	4th Quarter	March
REGION 9		
ZAMCELCO	4	8
ZANECO	0	1.5
ZAMSURECO I	4	8
ZAMSURECO II	2	2-3
REGION 10		
FIBECO	0	0
MOELCI I	0.5	3
MOELCI II	4	8
MORESCO I	0	0
MORESCO II	4	5
LANECO	2	5
BUSECO	0	2
CAMELCO	0.5	0.5
REGION 11		
DANECO	4	2-3
DASURECO	4	1
DORECO	1	4

Source: 2012 Average from NEA
2013 from meeting with ECs and NEA in CDO on 14 March 2013

Rotating Brownouts per EC Customers last March 2013

EC NAME	2012 Average Brownouts (in Hours)	2013 (in Hours)
	4th Quarter	March
REGION 12		
SOCOTECO I	1	3
SOCOTECO II	2	4
COTELCO	0.75	4
SUKELCO	1	2-3
CARAGA		
ANECO	0.5	1.5
SURNECO	1.5	2-4
ASELCO	4	4
SURSECO I	2	8
SURSECO II	0.5	1
SIARELCO	0.5	2
ARMM		
LASURECO	2	NS
MAGELCO	4	8

Source: 2012 Average from NEA
2013 from meeting with ECs and NEA in CDO on 14 March 2013

Note: NS – No Submission

Causes of Supply Deficit Last March 2013

(DOE, March 27, GenSan Power Forum)

- **Limited Hydro capability (Especially during dry months)**
  - Agus 4 Unit 2 (52.7 MW) with average available capacity of 40 MW, on shutdown due to low forebay elevation from 9 to 22 March 2013
  - Agus 7 Unit 1 (27 MW) on limited capability (12 MW) due to low forebay elevation since 20 March 2013

- **Planned outages of Large Power Plant Unit**
  - Pulangi IV Unit 1 (85 MW) with available capacity of 75 MW, on Planned Outage from 1 to 26 March 2013

- **Non-operation of power plant**
  - IDPP (100 MW) with contracted capacity of 98 MW, on rehabilitation, to be operational in April 2013 at initial capacity of 15 MW

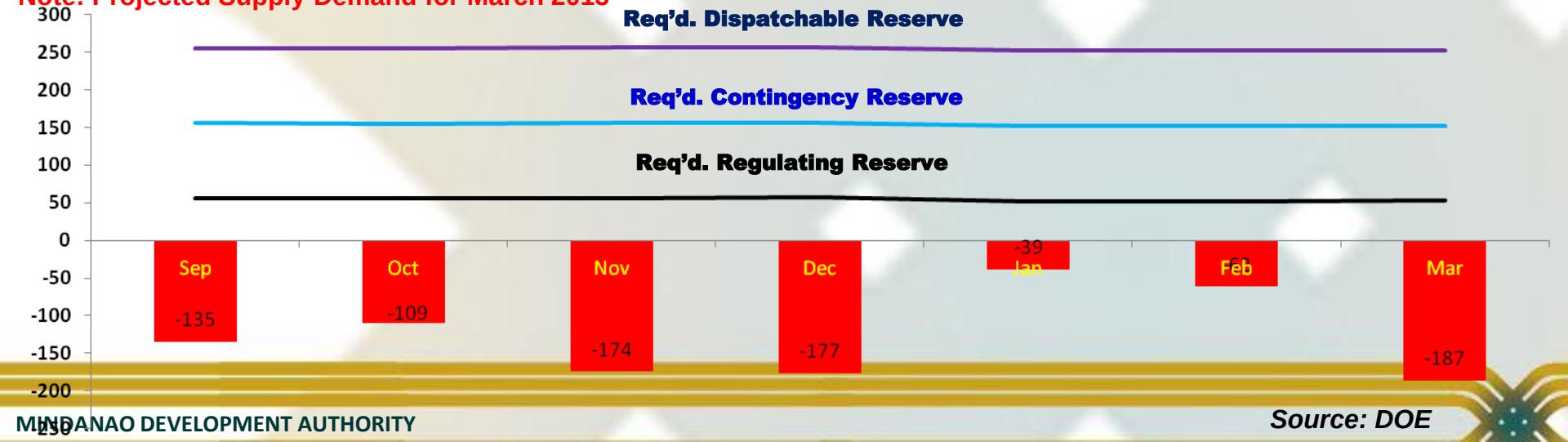
- **Un-expected/Forced Outages**
  - Agus 6 Unit 1 (25 MW) with average available capacity 17 MW, out since 4 January 2013 due to guide bearing problem. ETC: 10 April 2013
  - TMI 1 Unit 2 (50.16 MW) on forced outage last 18 March 2013. ETC dependent of arrival of equipment coming from Denmark

Source: DOE

Mindanao Grid Historical Supply-Demand

FUEL TYPE	2012 Monthly Average Capacity, MW				2013 Monthly Average Capacity, MW		
	Sep	Oct	Nov	Dec	Jan	Feb	Mar
COAL	202	200	201	200	201	202	201
OIL-BASED	296	324	317	292	313	343	340
GEOTHERMAL	90	90	69	90	91	95	96
HYDROELECTRIC	667	660	634	658	662	604	487
TOTAL CAPACITY	**1,255**	**1,275**	**1,220**	**1,240**	**1,267**	**1,243**	**1,124**
Demand + Curtailed Load	1,390	1,384	1,394	1,417	1,306	1,305	1,311
GROSS RESERVE	-135	-109	-174	-177	-39	-62	-187
Req'd. Regulating Reserve	56	55	56	57	52	52	52
Req'd. Contingency Reserve	100	100	100	100	100	100	100
Req'd. Dispatchable Reserve	100	100	100	100	100	100	100

Note: Projected Supply-Demand for March 2013



Source: DOE

What's the latest situation?

Electric Cooperatives Power Situation As of June 2013

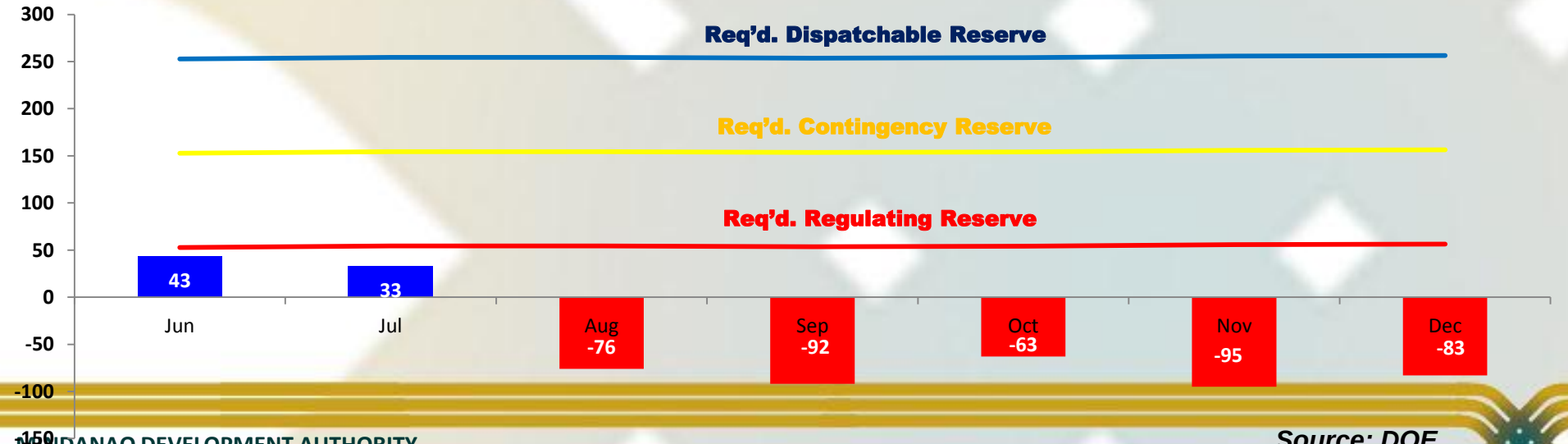
EC	No. of Interruption	Duration per Interruption (Hours)	Total Duration (Hours)
ZAMCELCO	1	2	2
ZAMSURECO I	2	2	4
ZAMSURECO II	1	2	2
ZANECO	1	45 mins.	45 mins.
LANECO	2	3	6
MOELCI I	2	1	2
MOELCI II	2	3	6
MORESCO II	1	4	4
DANECO	1	1	1
DASURECO	2	2	4
COTELCO	1	30 mins.	30 mins.
SOCOTECO II	2	1	2
SUKELCO	2	2	4
LASURECO	2	3	6
MAGELCO	2	2	4
ANECO	1	1.5	1
ASELCO	1	2	2
SURNECO	2	2	4
SURSECO I	1	1.5	1
SURSECO II	1	1	1

NEA Summary Report as reported by DOE, June 5, 2013 MPMC Meeting)

ECs without Interruptions:
BUSECO, CAMELCO,FIBECO,MORESCO I,DORECO,SOCOTECO I,SIARELCO

Mindanao Grid Outlook, June-December 2013

	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Coal	208	208	104	104	104	208	208
Oil-based	332	342	352	342	347	327	342
IDPP	30	50	60	75	98	98	98
Geothermal	76	76	76	49	76	98	98
Hydro	710	710	686	671	656	563	572
Biomass	8	8	8	8	8	8	8
Available Capacity	**1364**	**1394**	**1286**	**1249**	**1289**	**1302**	**1326**
Projected Demand	**1321**	**1361**	**1362**	**1341**	**1352**	**1397**	**1409**
System Gross Reserve	**43**	**33**	**-76**	**-92**	**-63**	**-95**	**-83**
Req'd. Regulating Reserve	53	54	54	54	54	56	56
Req'd. Contingency Reserve	100	100	100	100	100	100	100
Req'd. DispatchableReserve	100	100	100	100	100	100	100



Source: DOE

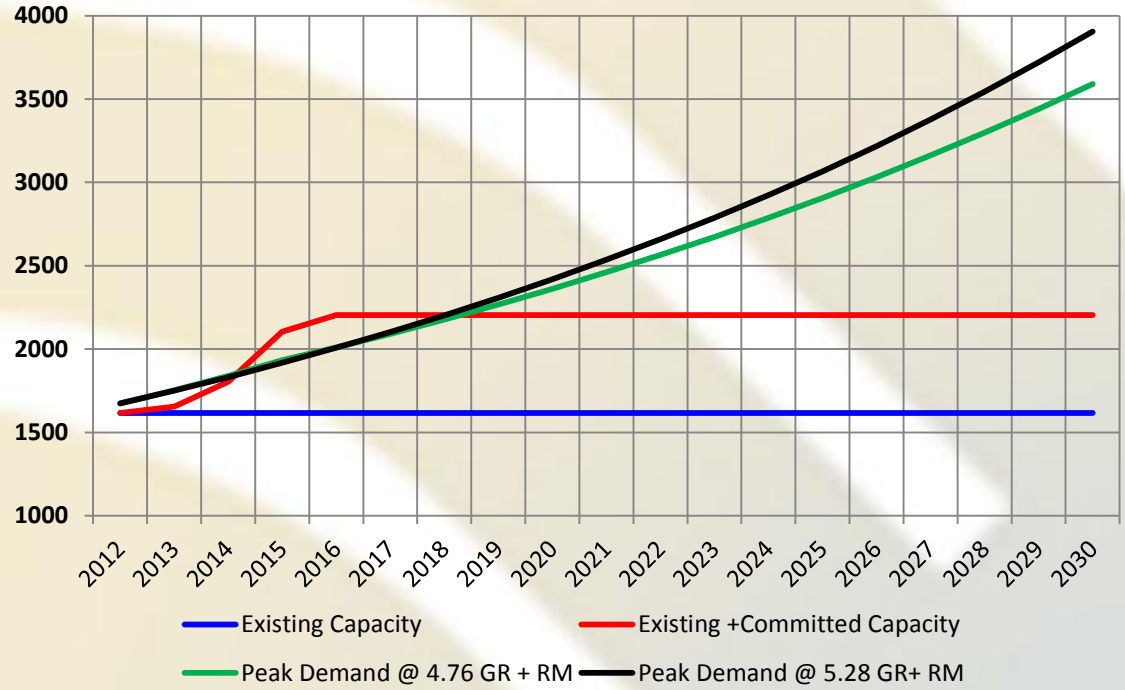
Mindanao Grid Outlook, August-December 2013

- Another round of shortfall expected as major power plants such as Steag Coal (210MW), Agus 4 (120MW) and Agus 6 (150MW) go on Preventive Maintenance Shutdown (PMS).

- Normally, planned maintenance shutdowns are not supposed to result to load curtailments under a condition where Mindanao grid is having excess capacity to be used as ancillary or reserves, ideally 150-250MW at any given time.

- Power supply demand normally peaks during the holiday season starting from the 2nd week of November all the way through December.

Mindanao Grid Supply-Demand Outlook, 2012-2030



Critical Periods

2013 – at any growth rate assumption

2014 – initial relief period due to committed capacities

2018 – next critical period

Additional capacity requirement will be more than calculated due to presence of suppressed demand

Notes

a. Demand curve represents total of peak demand and required Regulating Reserve (RM) i.e. 4% regulating reserve and contingency and dispatchable reserve requirement (RM).

b. 4.76% peak demand growth rate resulted from aggregated demand as submitted by the utilities to DOE.

c. 5.28% peak demand growth rate resulted from observed 0.8 elasticity ratio of demand for electric power with national economic growth applied to 6.6 percent GDP growth rate (GR) for 2012.

d. Power demand in the island remains restrained. Grew by 1.84 percent in 2012.

Source: DOE

What measures are being pursued to bridge 2 years of supply gap until 2015?

Solution Within the System, then External

Deficit can be addressed in the immediate term with additional capacities through, among others:

1) **Quick rehab/uprating of Agus/Pulangi *(50-100MW)***

2) **Tapping of additional power from the Interim Mindanao Electricity Market (IMEM) *(100 - 150MW)***

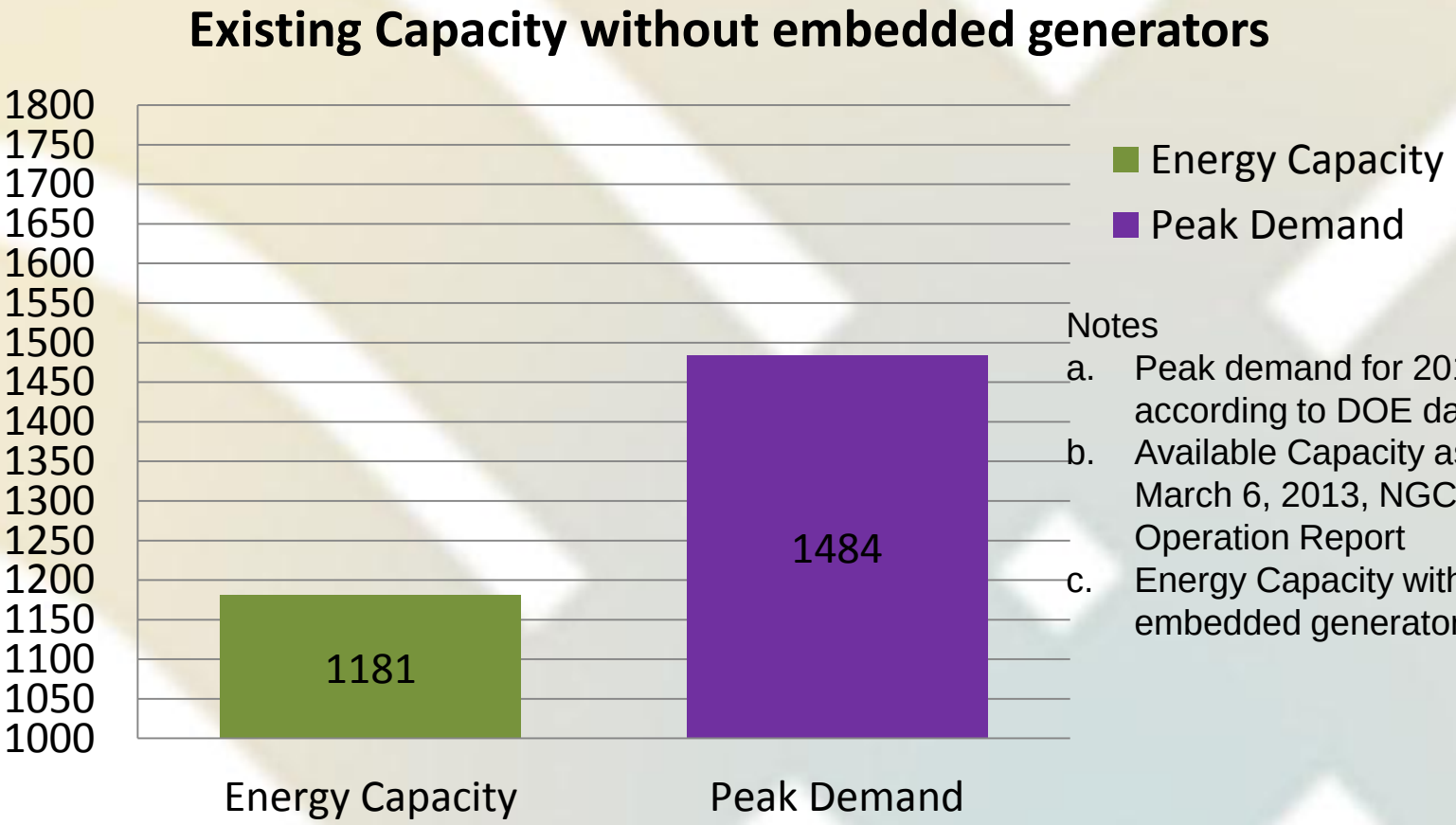
3) **Reopening of Iligan Diesel Power Plant *(100MW)***

4) **Modular Generator Sets *(50-100MW)***

So, that's 300-400MW of power to bail us out of trouble; but it ain't easy fix.

What's the situation like when measures are working?

Demand Supply Outlook for 2013

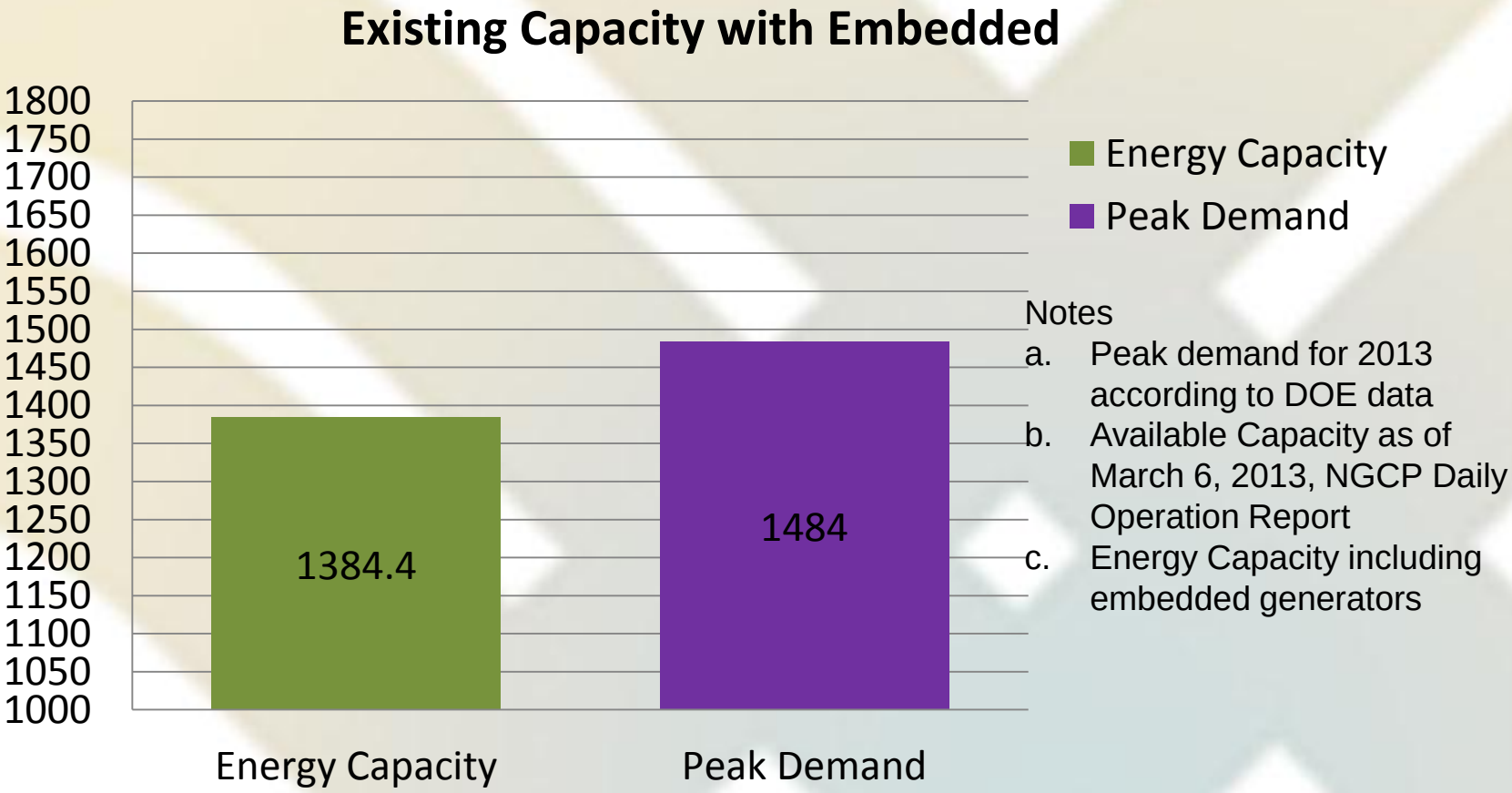


Notes

a. Peak demand for 2013 according to DOE data
b. Available Capacity as of March 6, 2013, NGCP Daily Operation Report
c. Energy Capacity without embedded generators

Energy Deficit = 303 MW

Demand Supply Outlook for 2013



Notes

a. Peak demand for 2013 according to DOE data

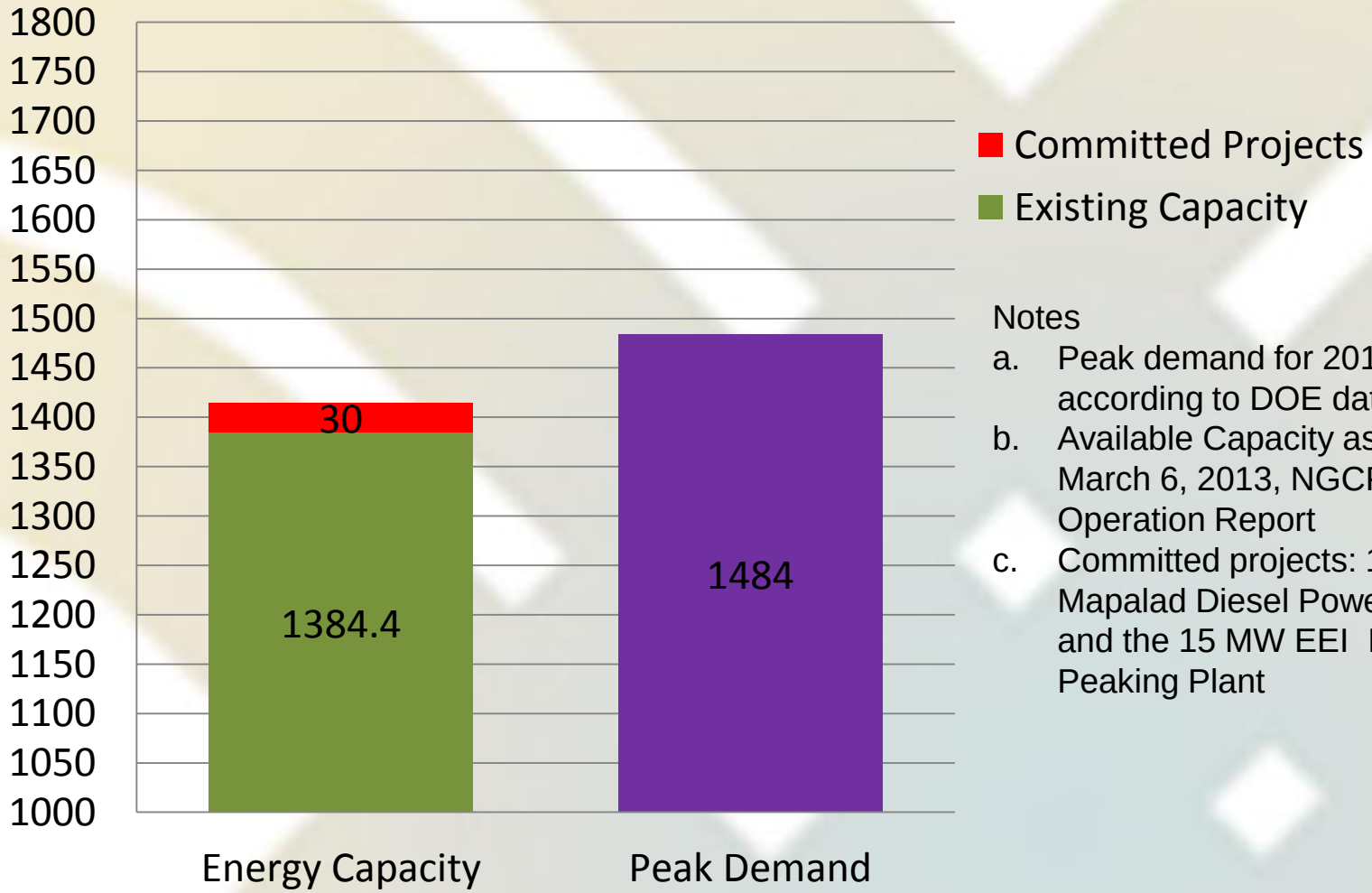
b. Available Capacity as of March 6, 2013, NGCP Daily Operation Report

c. Energy Capacity including embedded generators

Energy Deficit = 99.6 MW

Demand Supply Outlook for 2013

With Committed Projects

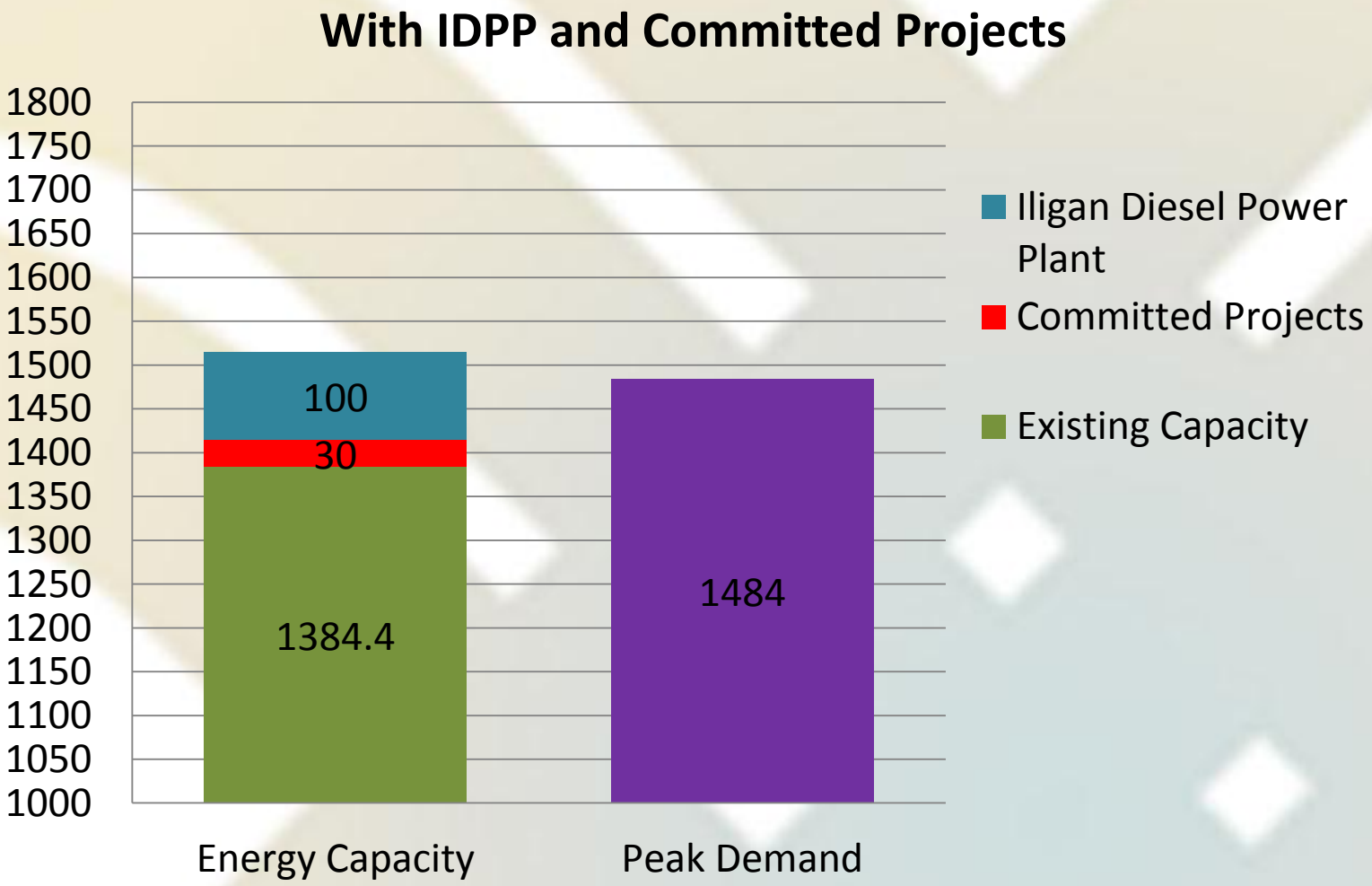


Notes

a. Peak demand for 2013 according to DOE data
b. Available Capacity as of March 6, 2013, NGCP Daily Operation Report
c. Committed projects: 15 MW Mapalad Diesel Power Plant and the 15 MW EEI HFO Peaking Plant

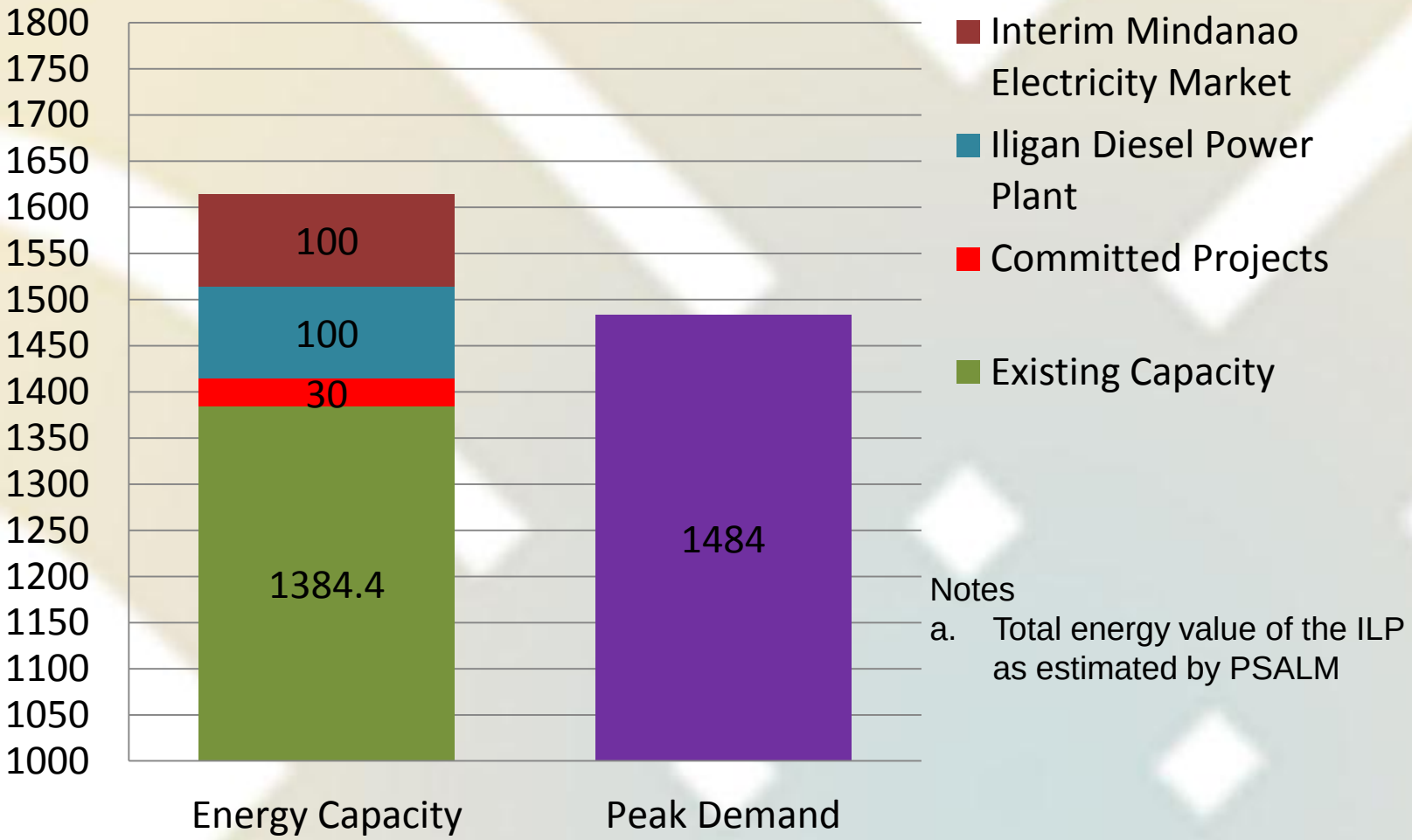
Energy Deficit = 69.6 MW

Demand Supply Outlook for 2013



Demand Supply Outlook for 2013

With IDPP, ILP and Committed Projects



Notes

a. Total energy value of the ILP as estimated by PSALM

The Mindanao Power Market Structure: How different is it from Luzon and Visayas?

The Mindanao Power Structure

The power sector of Mindanao has a very different structure than the rest of the Philippines:

- **Majority of power is distributed by ECs**
- **Mindanao power grid is separated from the national grid**
- **Power from NPC assets is the biggest source of electricity (54%)**

The Mindanao Power Structure

- The existing market situation in Mindanao is now a sellers market
- Supply is lower than demand, which prods several investors to come in despite the peace and order situation in some parts of Mindanao
- Entire approval process is as challenging as addressing the power problem itself – requires harmonization of process

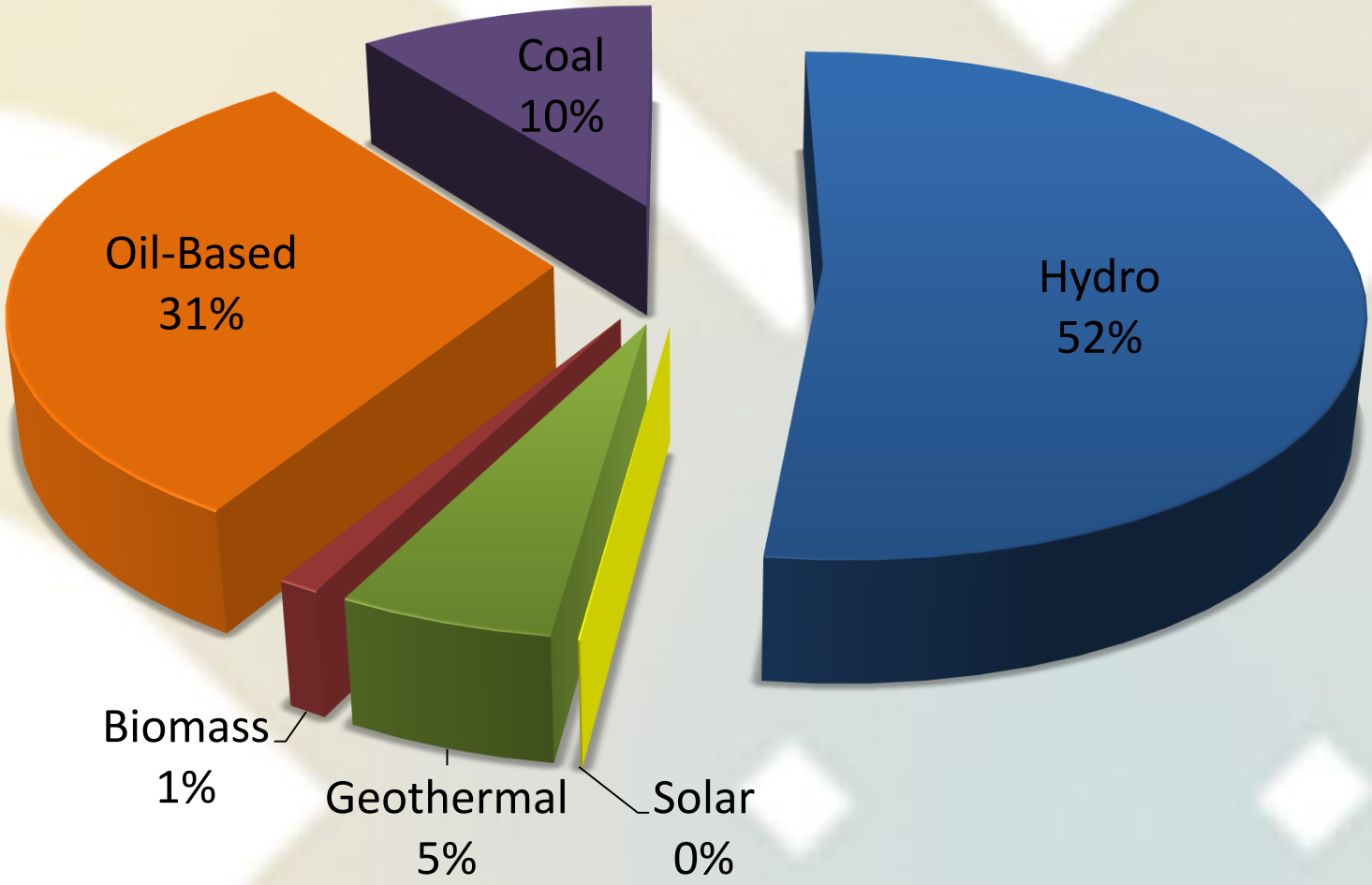
Understanding Renewable Energy in Mindanao: *Realities and Challenges*

RE Realities and Challenges

- Potential is huge but largely untapped
- Requires bigger initial capital
- Needs substantial investment to meet economic of scale/viability
- If via Feed-in-Tariff (FIT), governed by national installation targets and approved FIT rates

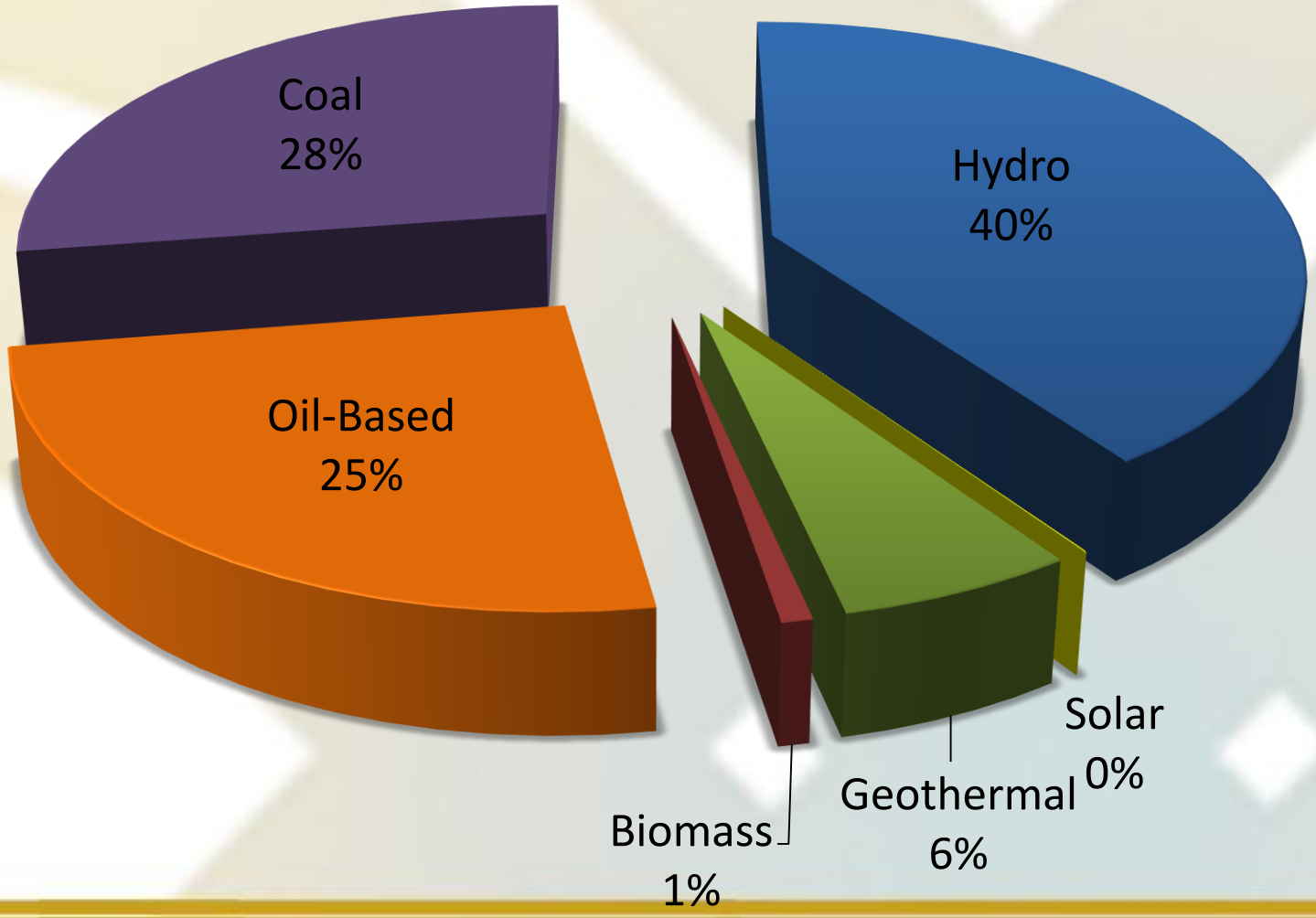
RE Realities and Challenges

Mindanao Energy Mix
As of 2013



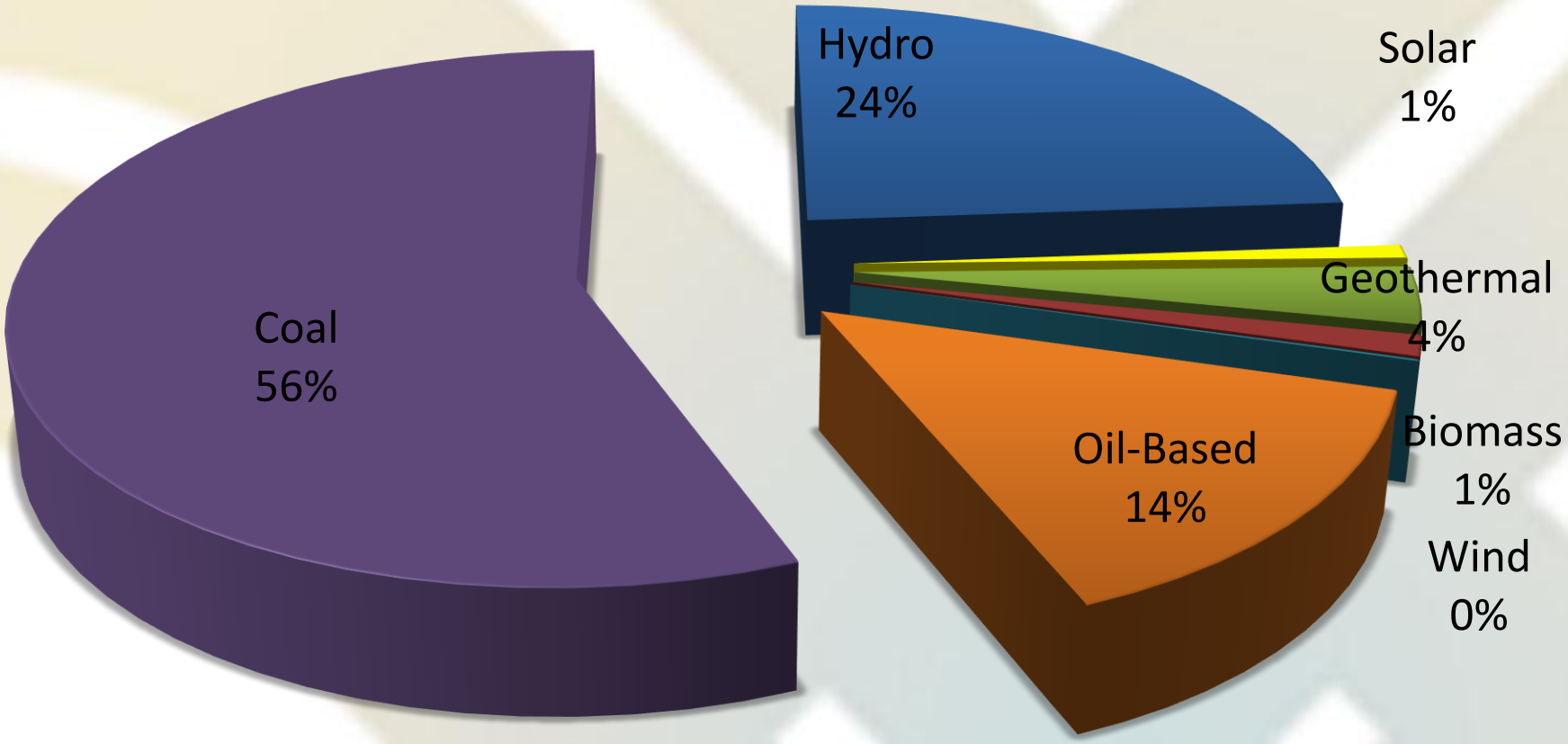
RE Realities and Challenges

Mindanao Energy Mix by 2016
(Including committed projects)



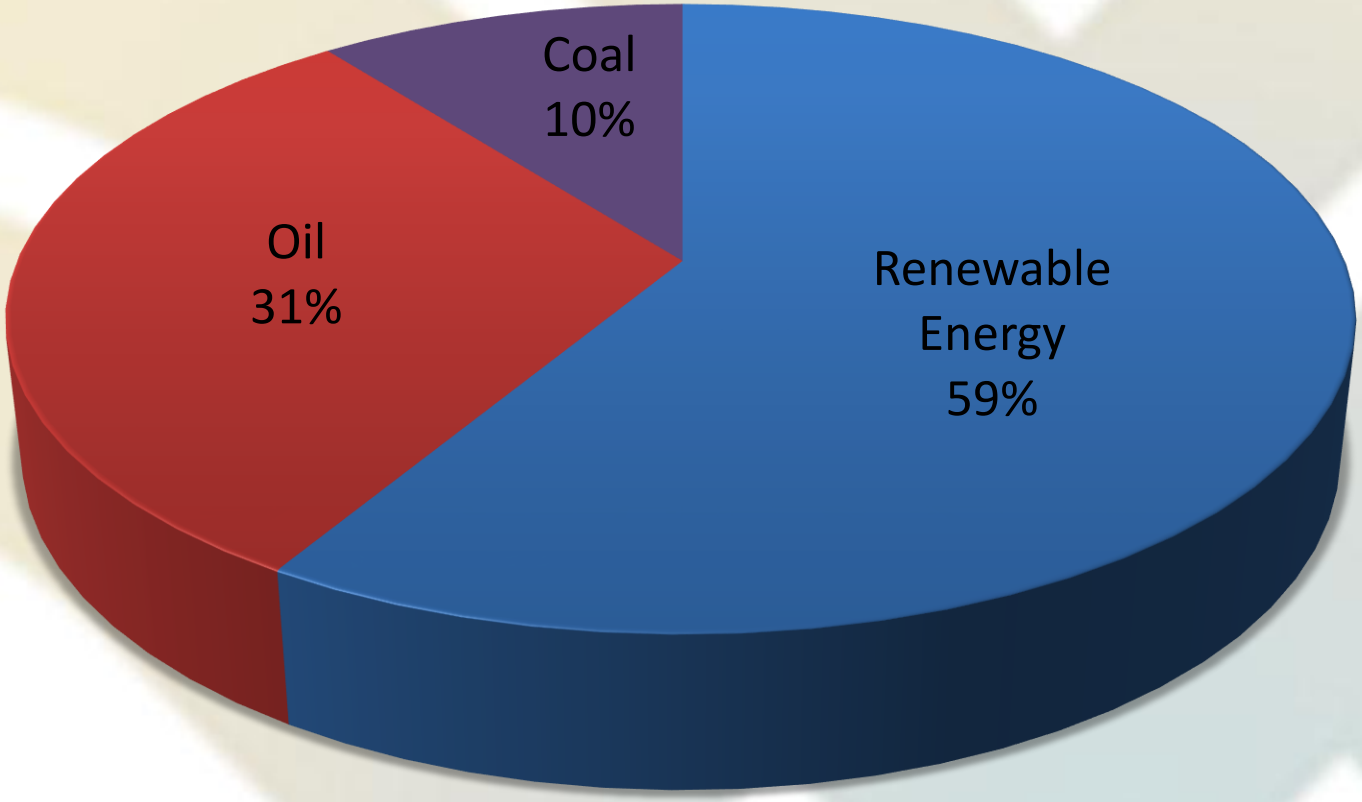
RE Realities and Challenges

Mindanao Energy Mix by 2019-2020
(Including committed and indicative projects)



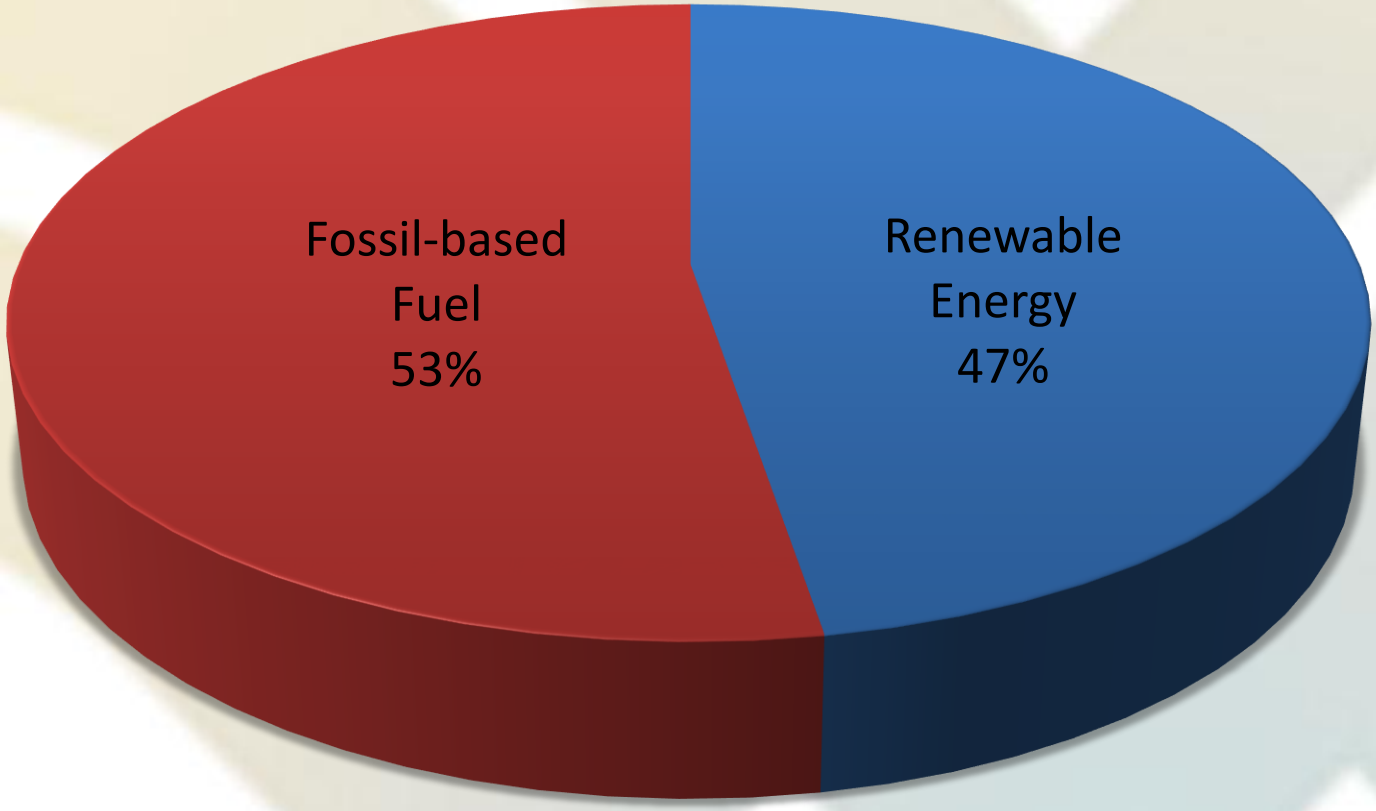
RE Realities and Challenges

Mindanao Energy Mix
As of 2013



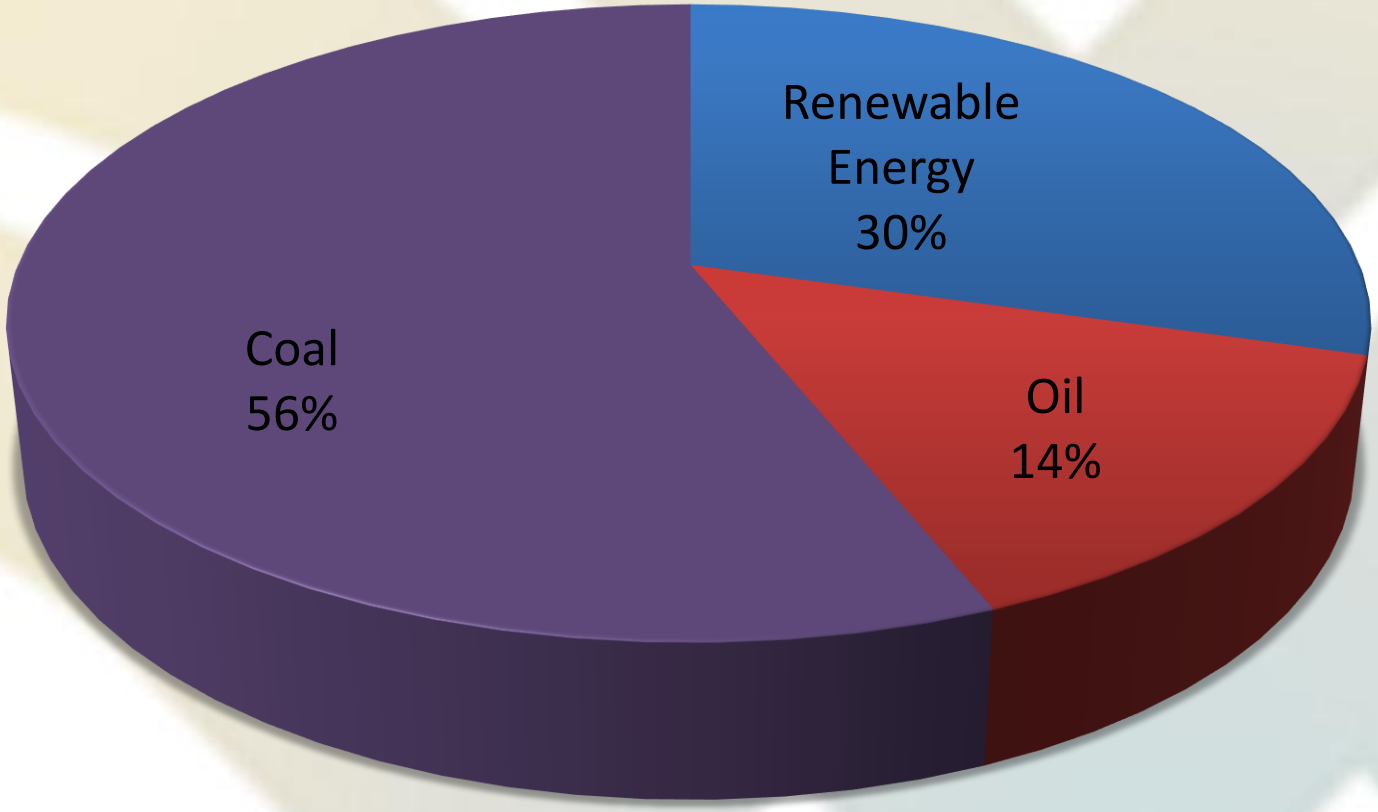
RE Realities and Challenges

Mindanao Energy Mix by 2016
(Including committed projects)



RE Realities and Challenges

Mindanao Energy Mix by 2018
(Including committed and indicative projects)



By 2018, Mindanao's energy mix will shift from present 60% RE and 40% fossil, to 70-30 in favor of fossil, mostly coal.

What's the way forward for RE development in Mindanao?

Create the RE rush!

Way Forward

1. Pursue Mindanao 2020 framework on diversification of energy mix with RE high on the agenda *(target 50-50 RE-fossil mix)*

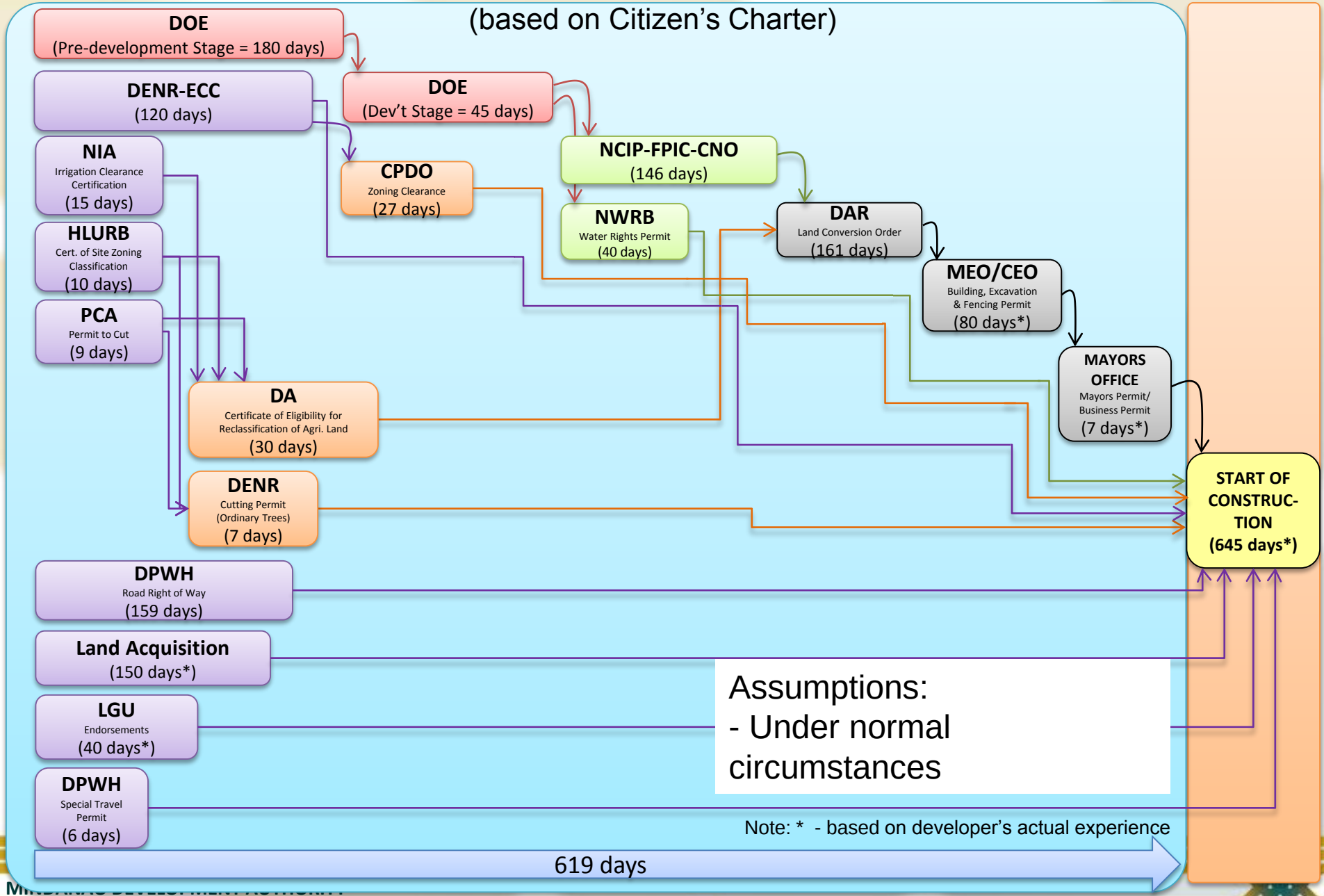
2. Aggressively promote deployment of RE projects (even outside FIT)

3. Encourage more ECs/DUs to have RE as embedded (e.g. small hydro, biomass, solar)

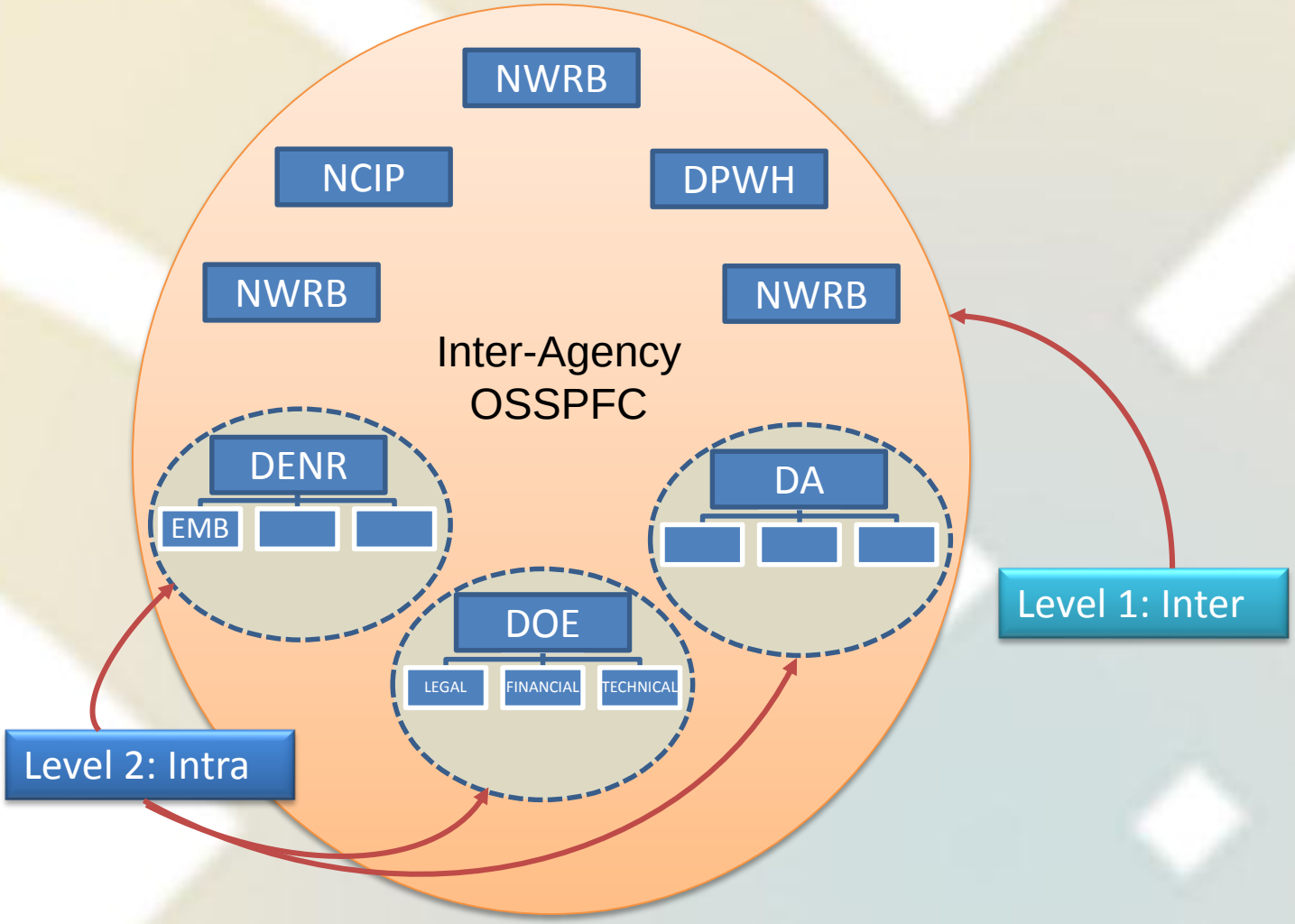
4. Accelerate approval of RE projects via One Stop Shop Processing and Facilitation Center being set-up be DOE and MinDA (proposed EO now being drafted)

GANTT CHART ON THE APPLICATION PROCESS FLOW FOR HYDRO POWER PROJECT

(based on Citizen's Charter)



OSSPFC FRAMEWORK

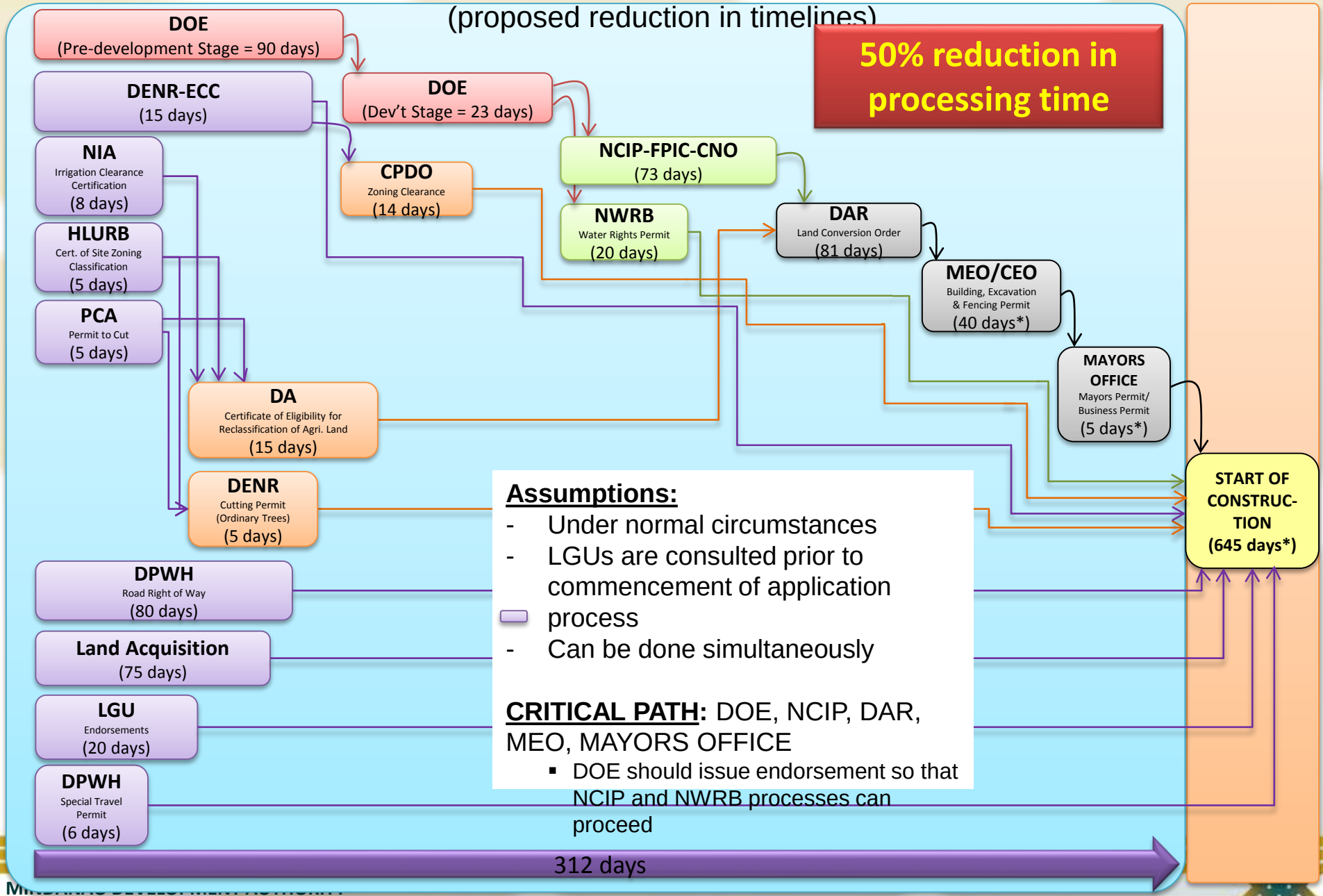


OSSPFC Functions

1. Facilitation of approval process: designate permanent focal personnel
2. Endorsements/Advisory Services
3. Review and ground validation
4. Monitoring and evaluation: on-line tracking through MPMC portal

GANTT CHART ON THE APPLICATION PROCESS FLOW FOR HYDRO POWER PROJECT

(proposed reduction in timelines)



Pilot: Region X (Summary)

PROPONENT	NUMBER OF PROJECTS	CAPACITY (MW)
Hedcor, Inc.	4	49.04
JE Hydropower Ventures, Inc.	3	22.00
First Gen Mindanao Hydro Power Corp.	2	18.00
Provincial Government of Lanao del Norte	1	11.90
Euro Hydro Power (Asia) Holdings, Inc.	5	10.20
Minergy Energy Systems, Inc.	1	10.00
Nebo Green energy Development Corporation	1	6.20
Sta. Clara Power Corporation	2	5.00
TOTAL	**19**	**132.34**

Pilot: Region X (Detailed List)

Owner	Project Name	Location	Capacity (MW)	Target Year	Status (DOE)	Remark (DOE)
Euro Hydro Power (Asia) Holdings, Inc.	Lower Siloo	Malitbong, Bukidnon	2.5		Pending Hydropower application (Pre- Development)	Project technical evaluation for approval.
	Nabantantungan	Maramag, Bukidnon	1		Pending Hydropower application (Pre- Development)	For technical & financial evaluation; with letter dated May 15, 2012 - revision of work program
	Atugan Falls	Impasugong, Bukidnon	0.6	2015	Pending Hydropower application (Pre- Development)	For technical & financial evaluation; with letter dated May 15, 2012 - revision of work program
	Atugan Falls (Lower)	Impasugong, Bukidnon	3.5	2015	Pending Hydropower application (Pre- Development)	For technical & financial evaluation; with letter dated May 15, 2012 - revision of work program

Pilot: Region X (Detailed List)

Owner	Project Name	Location	Capacity (MW)	Target Year	Status (DOE)	Remark (DOE)
Euro Hydro Power (Asia) Holdings, Inc.	Atugan Falls (Upper)	Impasugong, Bukidnon	2.6	2015	Pending Hydropower application (Pre- Development)	For technical & financial evaluation; with letter dated May 15, 2012 - revision of work program
First Gen Mindanao Hydro Power Corp.	Cagayan River 1	Talakag, Bukidnon	8	2016	Pending Hydropower application (Pre- Development)	On going technical evaluation
	Cagayan River 2	Talakag, Bukidnon	10	2016	Pending Hydropower application (Pre- Development)	On going technical evaluation
Hedcor, Inc.	Amusig	Santiago, Bukidnon	15.4		Pending Hydropower application (Pre- Development)	Recommended for possible endorsement to Review Committee
	Malagaong	Santiago, Bukidnon	11.2		Pending Hydropower application (Pre- Development)	Submitted revised work program on May 3, 2012 still not acceptable. Need to revised the WP.

Pilot: Region X (Detailed List)

Owner	Project Name	Location	Capacity (MW)	Target Year	Status (DOE)	Remark (DOE)
Hedcor, Inc.	Manolo Fortich 2	Manolo Fortich, Bukidnon	16.34		Pending Hydropower application (Pre- Development)	On going technical evaluation
	Guihian	Guihan, Bukidnon	6.1		Pending Hydropower application (Pre- Development)	Recommended for possible endorsement to Review Committee
JE Hydropower Ventures, Inc.	Odiongan (Upper Cascade)	Gingoog City, Misamis Oriental	3	2019	Pending Hydropower application	For submission of complete docuemntray requirements
	Odiongan (Lower Cascade)	Gingoog City	9	2020	Pending Hydropower application	For submission of complete docuemntray requirements
	Odiongan (Middle Cascade)	Gingoog City	10	2020	Pending Hydropower application	For submission of complete docuemntray requirements
Minergy Energy Systems, Inc.	Lower Cabulig	Jasaan, Misamis Oriental	10	2017	Pending Hydropower application (Pre- Development)	Recommended for possible endorsement to Review Committee

Pilot: Region X (Detailed List)

Owner	Project Name	Location	Capacity (MW)	Target Year	Status (DOE)	Remark (DOE)
Nebo Green energy Development Corporation	Lower Manupali	Valencia, Bukidnon	6.2		Pending Hydropower application (Pre-Development)	Site within the NIPAS area. Sent letter dated 5 September 2012 to submit concurrence and submission of lacking documentary requirements within 30 days.
Provincial Government of Lanao del Norte	Liangan	Bacolod, Lanao del Norte	11.90		Pending Hydropower application (Development)	For submission of lacking documentary requirements. With follow-up letter dated June 20, 2011. Submitted documentary requirements on July 26, 2012 thru Energy Logics Group, Inc. (ELGI). With letter dated 10 September 2012 for submission of lacking documentary requirements within 30 days.

Pilot: Region X (Detailed List)

Owner	Project Name	Location	Capacity (MW)	Target Year	Status (DOE)	Remark (DOE)
Sta. Clara Power Corporation	Upper Canayan	Malaybalay, Bukidnon	2		Pending Hydropower application (Pre-Development)	For technical evaluation. With letter dated 31 July 2012 for submisision of revised WP within 30 days upon receipt of letter.
Sta. Clara Power Corporation	Middle Canayan	Malaybalay, Bukidnon	3		Pending Hydropower application (Pre-Development)	For technical evaluation.. With letter dated 31 July 2012 for submisision of revised WP within 30 days upon receipt of letter.

How are the short term and long terms efforts being pursued and monitored?

Through the Mindanao Power Monitoring Committee (MPMC)

Executive Order No. 81

Mindanao Power Monitoring Committee (MPMC)

MPMC

Mandate

"to spearhead and coordinate the efforts of the national, regional and local governments, and power industry stakeholders to improve the power situation in Mindanao"

MPMC

Composition

1. Mindanao Development Authority (MinDA), *Chair*
2. Department of Energy (DOE), *Co-Chair*
3. Energy Regulatory Commission (ERC)
4. National Electrification Administration (NEA)
5. National Power Corporation (NPC)
6. Power Sector Assets and Liabilities Management Corporation (PSALM)
7. Mindanao Electric Power Alliance (MEPA)
8. Association of Mindanao Rural Electric Cooperatives (AMRECO)
9. **National Transmission Corporation (Transco)*
10. **National Grid Corporation of the Philippines*

**Included later during the 2nd MPMC Principals Meeting on Nov 21, 2012*

Duties and Functions

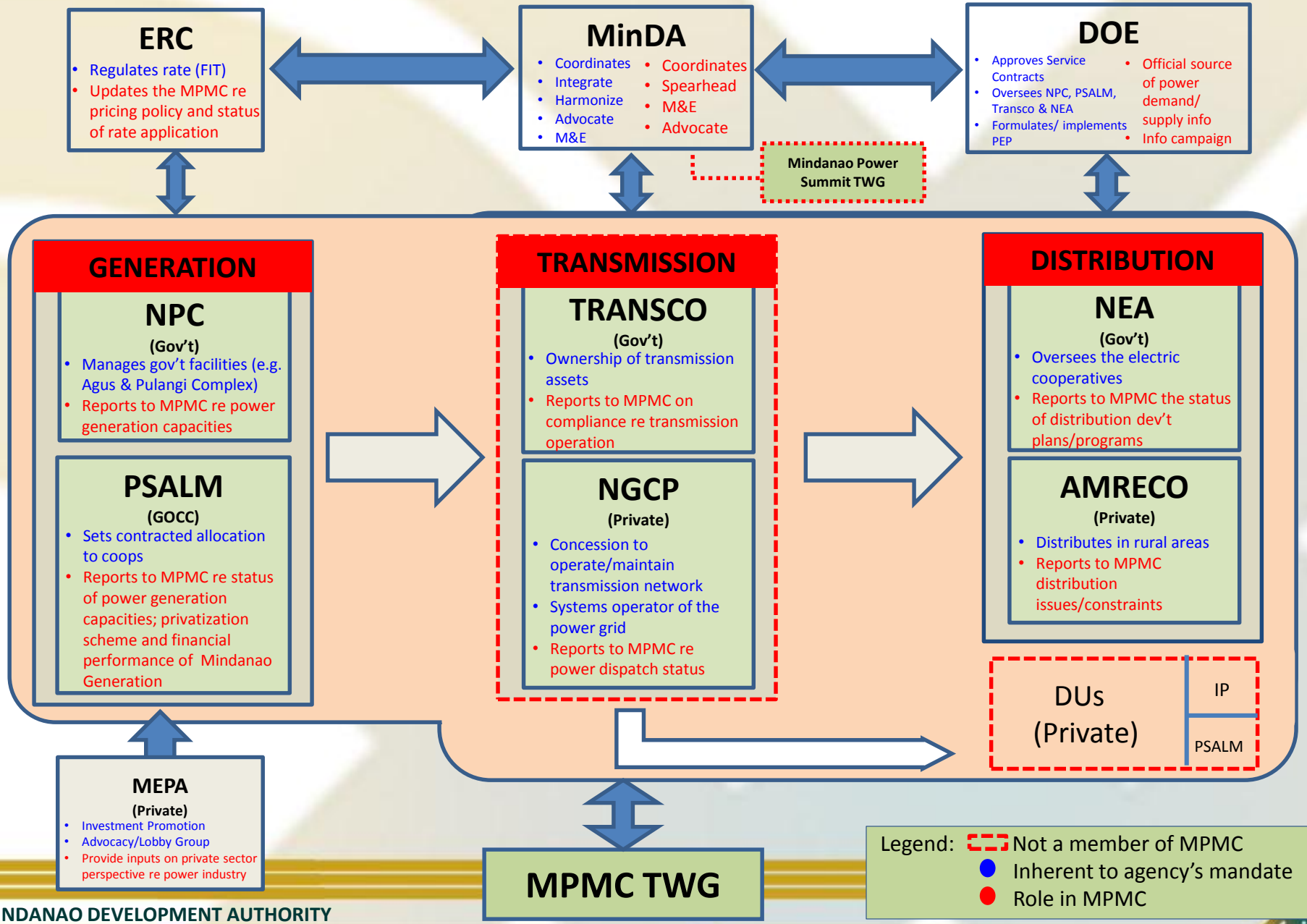
1. Develop a database containing vital information regarding the power sector in Mindanao and other matters that may affect it

2. Assess the current situation of the power sector in Mindanao and evaluate the viability of the Mindanao Power Summit recommendations

3. Regularly submit reports and recommendations to the President

4. Perform such other duties and functions as may be necessary to implement the EO

Organizational Structure of MPMC



Updates on the Recommended Measures

RECOMMENDATIONS	ADD'L CAPACITY (MW)	STATUS
Operate Iligan Diesel Power Plant (IDPP)	98	Currently running at 80 MW, full operations by Oct 2013
Creation of One-Stop-Shop		On-going trainings and testing of procedures and database system in the DOE-Mindanao Field Office **MinDA is developing the One Stop Processing and Facilitation Center involving all concerned agencies (eg NCIP, DENR, DA, DAR etc) to complement. Proposed E.O. is also being drafted.*
Formulate Appropriate Electricity Market in Mindanao	150 MW (Embedded) 183 MW (Directly Connected)	• Public Consultations; ERC hearing ongoing • DC Promulgating the IMEM Rules published on 1 June 2013 • Launching done on Sep 20; Full Commercial Operation by 26 November 2013

Updates on the Recommended Measures

RECOMMENDATIONS	ADD'L CAPACITY (MW)	STATUS
Modular Genset Program		• E.O. 137 signed by President Aquino on July 12, 2013 mandating its implementation with 4.5B allocation from Malampaya funds • AMRECO bidding process on-going
Privatization of PB 101-104		• Indicative bidding, 3rd quarter 2013
Develop Mindanao Energy Plan		• Proposed conduct of Consultations in July 2013 **MinDA is partnering with DOE for the conduct of regional consultations*
Interruptible Load Program (ILP)		• ERC approved the petition of Davao Light for Rules change on cost recovery ** MinDA working with DUs such as Davao Light for consultations with industries and LGUs on implementation mechanism*

Updates on the Recommended Measures

RECOMMENDATIONS	STATUS
Balo-I Flood Control Project (Increase Agus 2 output and address flooding in Balo-i Plain)	• Projects Cost: PhP 1.72 Billion proposed to NEDA • Ongoing discussion between NPC and LGU • Timeline: 24 Months from contract effectivity
Reservoir Management of Pulangi IV (still can carry 255 MW)	NPC doing the following: i) bottom sluice gates flushing when the need for water spillages (during rainy season); ii) in case of sediment build up, selective sediment removal
Agus 6 Unit 1&2 Uprating Project	• PSALM Board approved and confirmed project implementation including the realignment of budget from NPC-OMA MOOE to PSALM (29 April 2013) • Indicative bidding date, 3rd quarter 2013 • Awarding of contract, 4th quarter 2013 • Project Duration: 30 months (900 Calendar Days)
Privatization of Agus-Pulangi Complex	For further discussion with JCPC
Revisit the Economic Viability of Visayas-Mindanao Interconnection Project	• Completed Feasibility Study - March 2013; • Target Project Completion – **2018** (based on NGCP's TDP 2012 Update)

Measure	Status Update
Investment Forum on Energy Undertaken by DOE to present investments on power in Mindanao	• Scheduled on September 25, 2013 at Marco Polo Davao
Regional Briefings on Mindanao Power Investments to LGUs and Local Planners Briefings jointly undertaken by DOE and MinDA to update local chief executives and local lanning officers on power investments in their areas.	• Regional briefings to start with Region 10 scheduled on October 11, 2013 in Cagayan de Oro City

Measure	Status Update
Regional Media Briefings On Mindanao Power & Renewable Energy Development The conduct of Regional Media Briefings undertaken by MinDA, DOE and USAID-CEnergy to help capacitate key Mindanao media on energy/power reporting.	• 8 March 2013 – Davao City • 15 March 2013 – Zamboanga City • 22 March 2013 – Cagayan de Oro • 05 April 2013 – Butuan City • 12 April 2013 – Cotabato City
USAID-CENERGY Capacity Building for MinDA Part of the support of USAID-CEnergy to MinDA under the Partnership Program for Renewable Energy Advocacy and Development in Mindanao.	• Component of MinDA-CEnergy partnership program and designed to enhance MinDA technical team's understanding and appreciation of the power industry sector.

Measure	Status Update
Establishment of the Mindanao Power Data Portal	Undertaken the following: • Coordination meetings with energy family members on setting up mechanisms in sharing relevant data; • Database on existing power plants under NPC with status of operations. • Created database on pending Hydro Power Plant project applications. • Created database of DUs (private and ECs with their embedded, and corresponding contracted capacities)
Mindanao Energy Resources Assessment Project for Small Hydro Biomass Part of CEnergy-MinDA Partnership Program for Renewable Energy Advocacy and Development in Mindanao	• Energy Resource Assessments Projects completed; • MinDA and USAID-Cenergy to conduct Investment Forum in January 2014 to present viable projects for potential investors including LGUs

Integrating Mindanao.