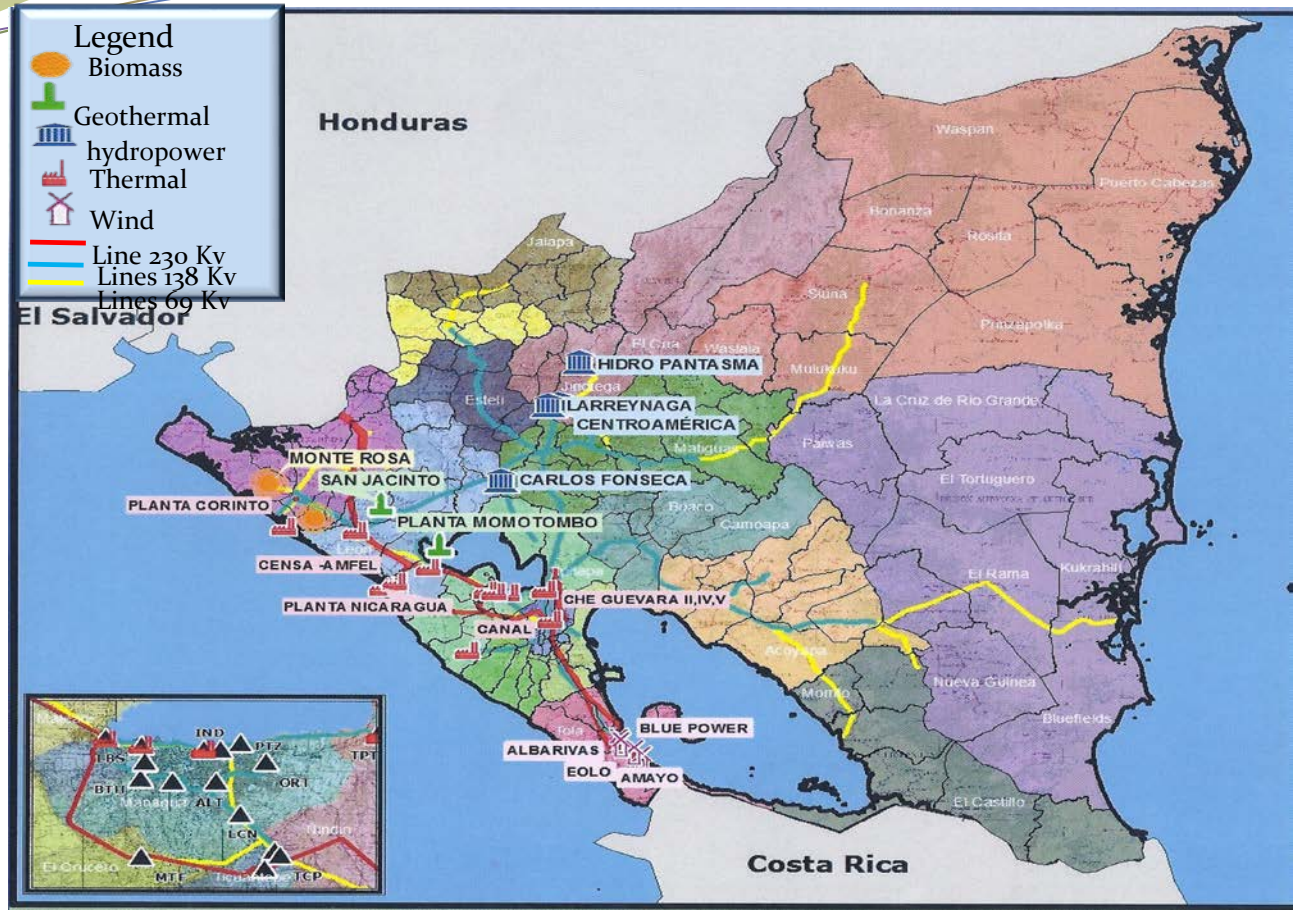
GEOTHERMAL DEVELOPMENT IN NICARAGUA

CURRENT SITUATION

Abril, 2016
Reykjavik

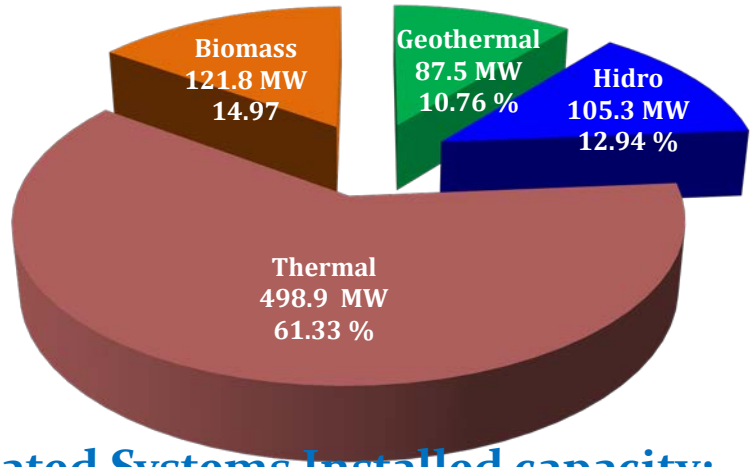
GENERATION POWER PLANTS 2015



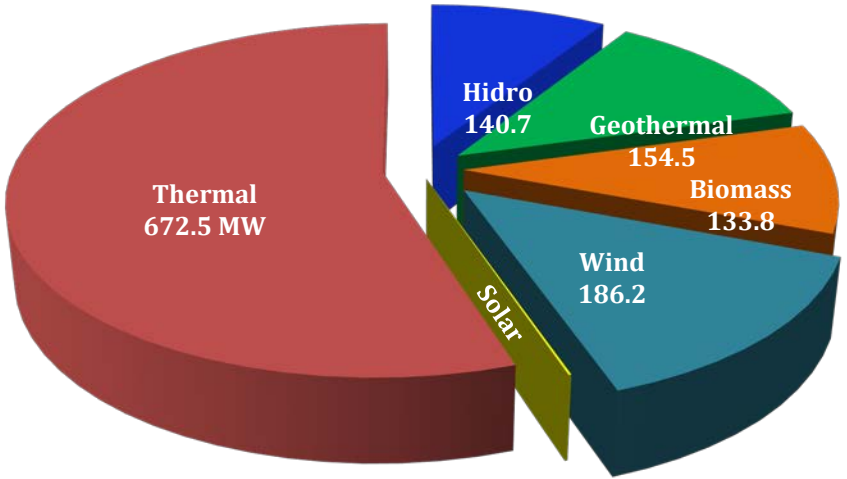
POWER PLANTS	INSTALLED CAPACITY (MW)
HYDRO	**140.7**
Centroamérica	50.0
Carlos Fonseca	54.4
Hidropantasma	14.4
Hemco	4.0
Larreynaga	17.0
Atder - BL El Bote	0.9
GEOTHERMAL	**154.5**
Momotombo	77.5
San Jacinto	77.0
THERMAL	**672.5**
Nicaragua	106.0
Managua - 4,5	12.4
Gesarsa	6.4
Censa - Amfels	65.3
Tipitapa Power	52.2
Corinto	74.0
Plantas Che Guevara	231.2
Hugo Chávez 1 - 2	60.0
Las Brisas 1-2	65.0
COGENERATION	**133.8**
Ing. San Antonio	79.3
Ingenio Monte Rosa	54.5
WIND	**186.2**
Amayo Fase I y II	63.0
Blue Power	39.6
Eolo	44.0
ALBA - RIVAS	39.6
SOLAR	**1.3**
SFV - TRINIDAD	1.3
TOTAL (MW)	**1289.0**

Nominal Installed Capacity
National Interconnected System

Installed Capacity in 2007 : 813.5 MW



Installed Capacity in 2015: 1289 MW

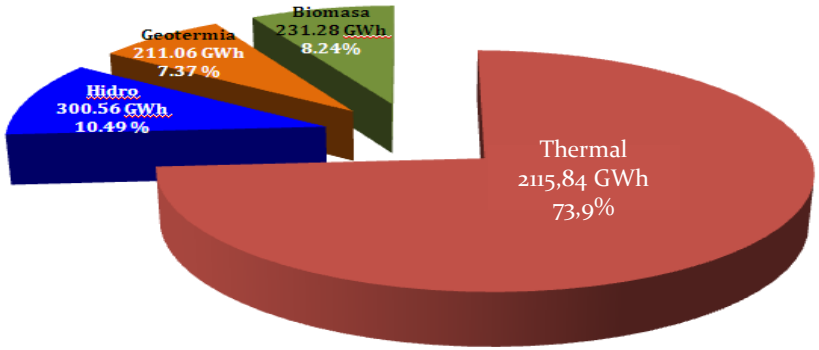


Isolated Systems Installed capacity:

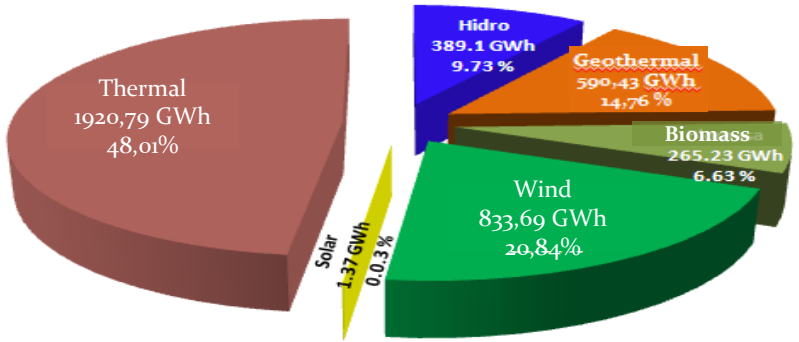
- 2007 → 18.22 MW
- 2014 16.04 MW

ENERGY GENERATED
NATIONAL INTERCONNECTED SYSTEM

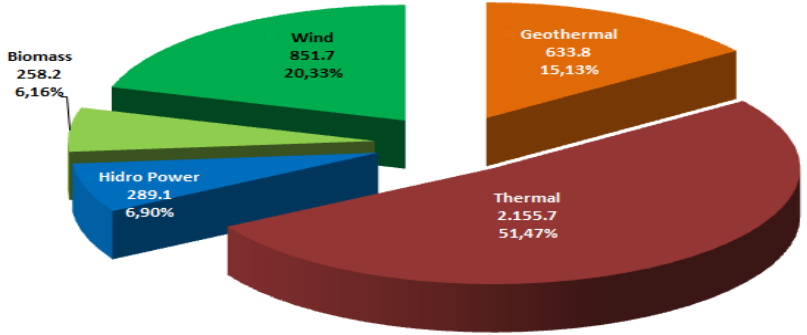
Energy Generation in 2007 : 2862.74 GWh



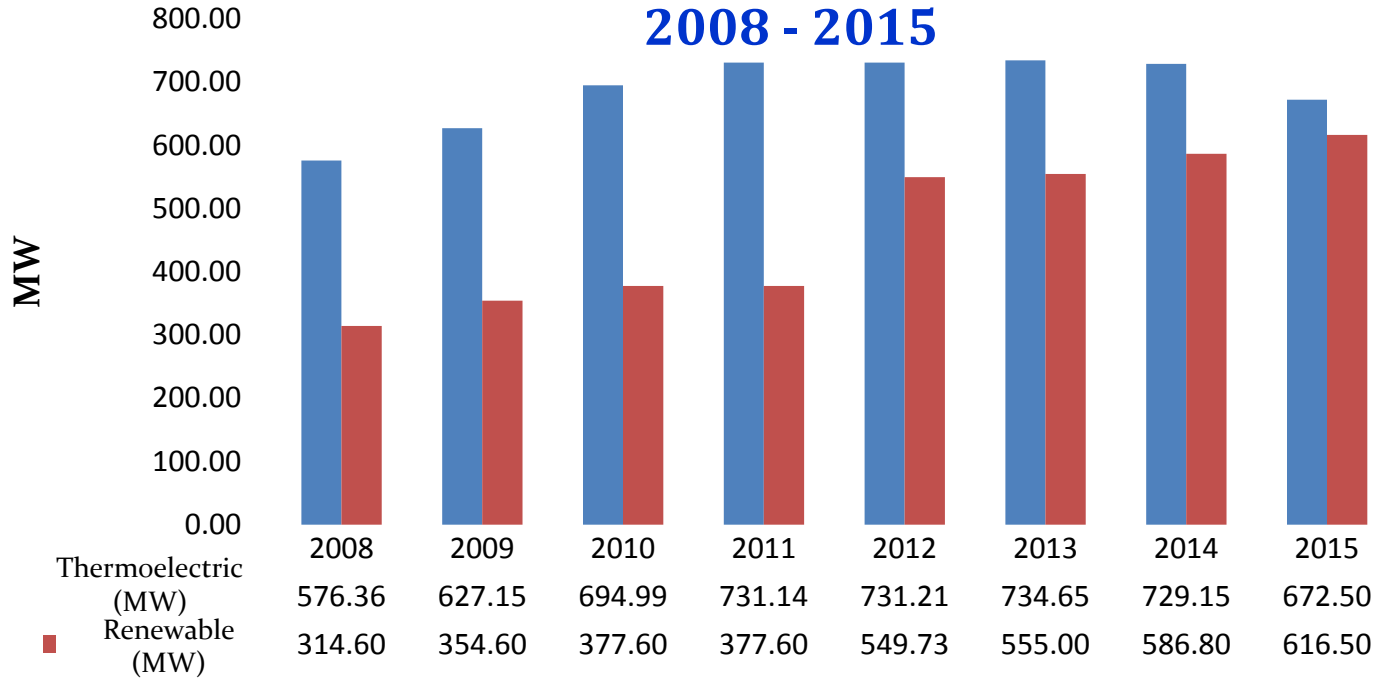
Energy Generation in 2014: 4000.61 GWh



Energy Generation 2015 : 4188.5 GWh



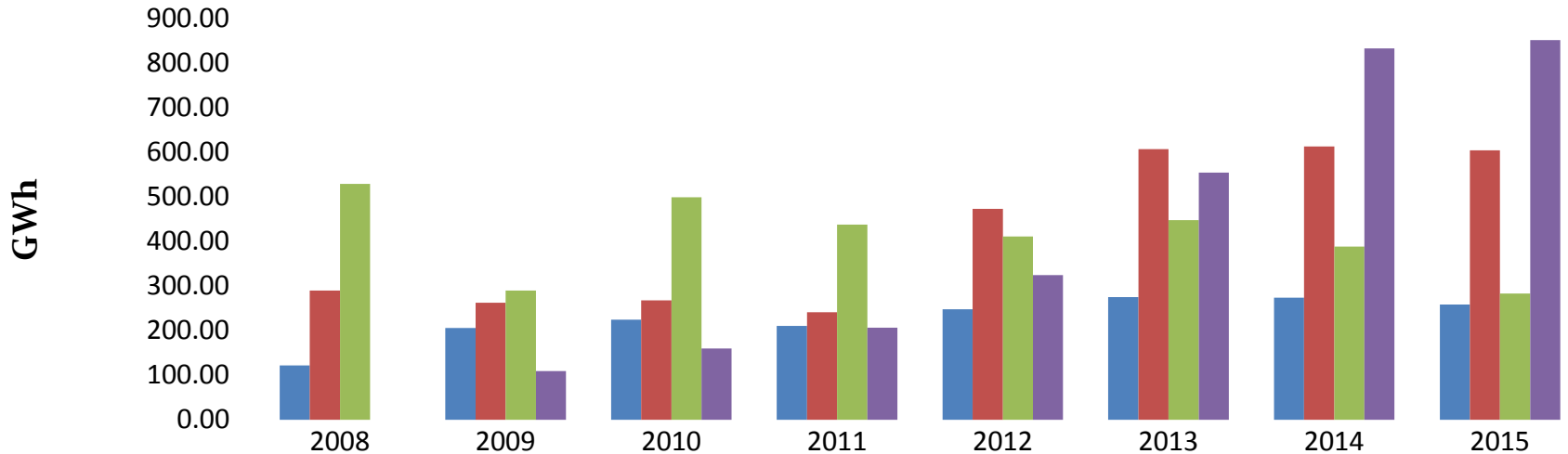
ASPECTS OF NICARAGUA ELECTRICITY MARKET
INSTALLED CAPACITY BY TYPE OF PLANT (MW)
2008 - 2015



ASPECTS OF NICARAGUA ELECTRICITY MARKET
INSTALLED CAPACITY BY TYPE OF RENEWABLE PLANT (MW)
2008 - 2015

	2008	2009	2010	2011	2012	2013	2014	2015
Biomass	121.80	121.80	121.80	121.80	133.80	133.80	126.80	133.80
Geothermal	87.50	87.50	87.50	87.50	164.50	154.50	153.50	154.50
Hidropower	105.30	105.30	105.30	105.30	105.70	120.10	140.70	140.70
Wind	0.00	40.00	63.00	63.00	145.73	146.60	187.10	186.20
Solar								1.30

ASPECTS OF NICARAGUA ELECTRICITY MARKET
ELECTRICITY GENERATION FROM RENEWABLE PLANTS (GWH)
2008 - 2015

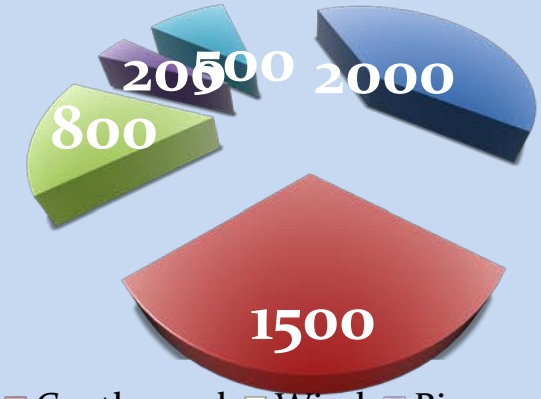


	2008	2009	2010	2011	2012	2013	2014	2015
Biomass	121.80	206.00	224.56	210.52	248.23	275.18	273.99	258.75
Geothermal	289.94	262.84	268.25	241.56	473.80	607.31	613.68	605.01
Hidropower	529.47	290.16	499.25	438.20	411.21	448.23	388.86	283.55
Wind	0.00	109.22	160.30	206.49	324.81	555.00	833.75	852.02

Renewable Energy Potential identified in Nicaragua

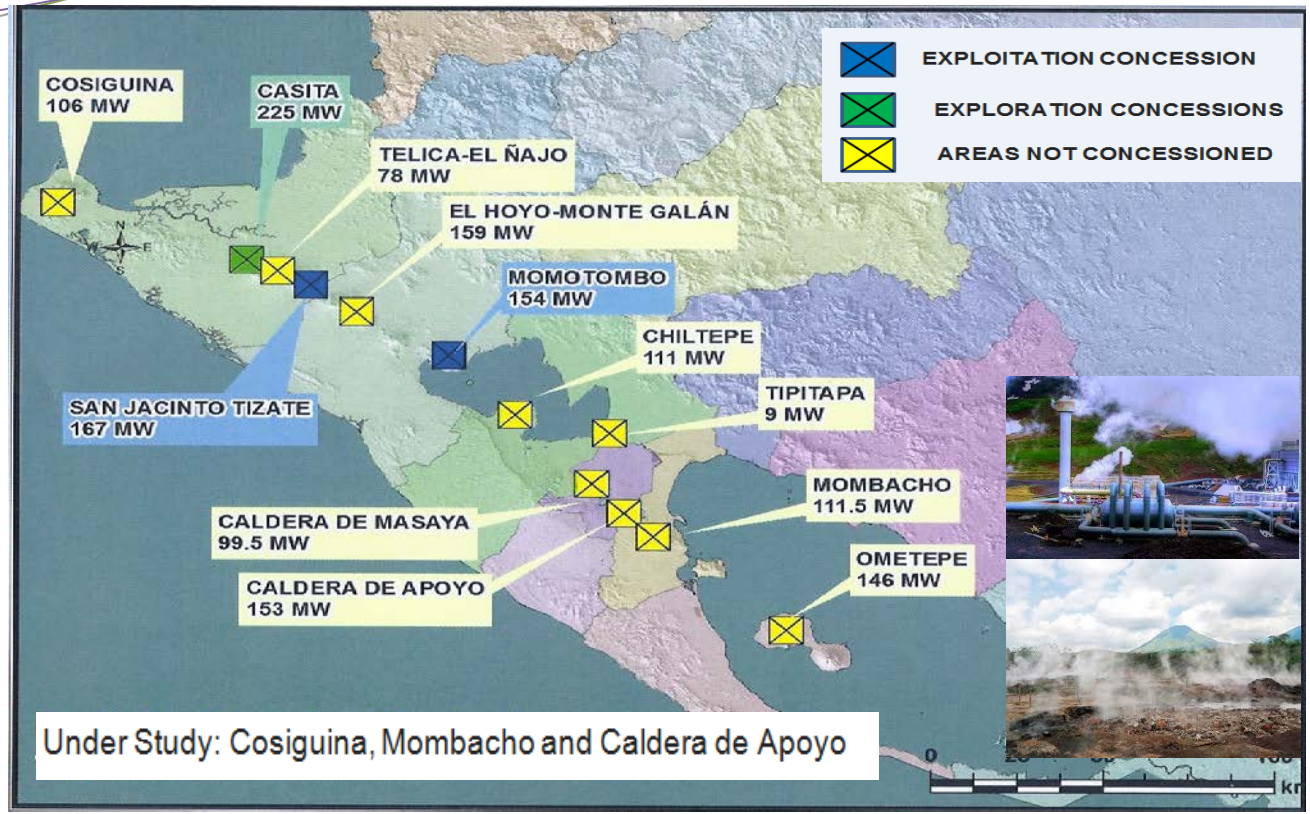
Identified potential : **5000 MW**

Potential currently exploited : **12%**



Type of Generation	Estimated Potential (MW)	Installed Capacity (MW)	Effective Capacity (MW)	Percentage Exploitation (%)
Hydroelectric	2000	140,7	134,9	7,03
Geothermal	1500	154,5	88	10,3
Wind	800	186,2	186,2	23,37
Biomass	200	133,8	60	66,9
Photovoltaic	500	1,3		0,26
Total	5000	616,5	470,4	12,33

POTENTIAL GEOTHERMAL RESOURCE



Geothermal potential in Nicaragua is 1519 MW

Exploitation Concessions:

a) Momotombo Geothermal Field
b) San Jacinto Geothermal Field

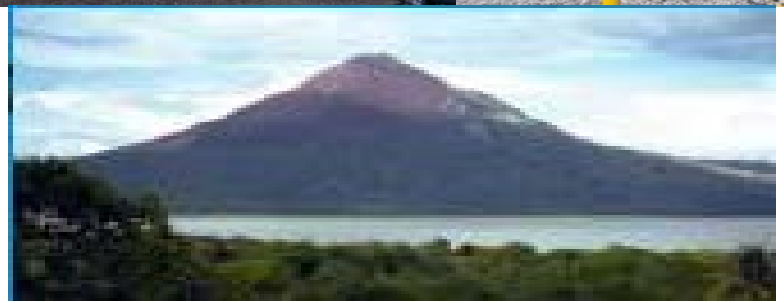
Exploration Concession**:**

a) Casita - San Cristóbal Geothermal Area

In **Pre-Feasibility** Study

- Cosigüina
- Mombacho
- Apoyo

MOMOTOMBO POWER PLANT



SAN JACINTO POWER PLANT
TWO UNITS OF 36 MW

GEOTHERMAL AREAS : MASAYA-GRANADA-NANDAIME

- Apoyo Caldera

- Mombacho Volcano

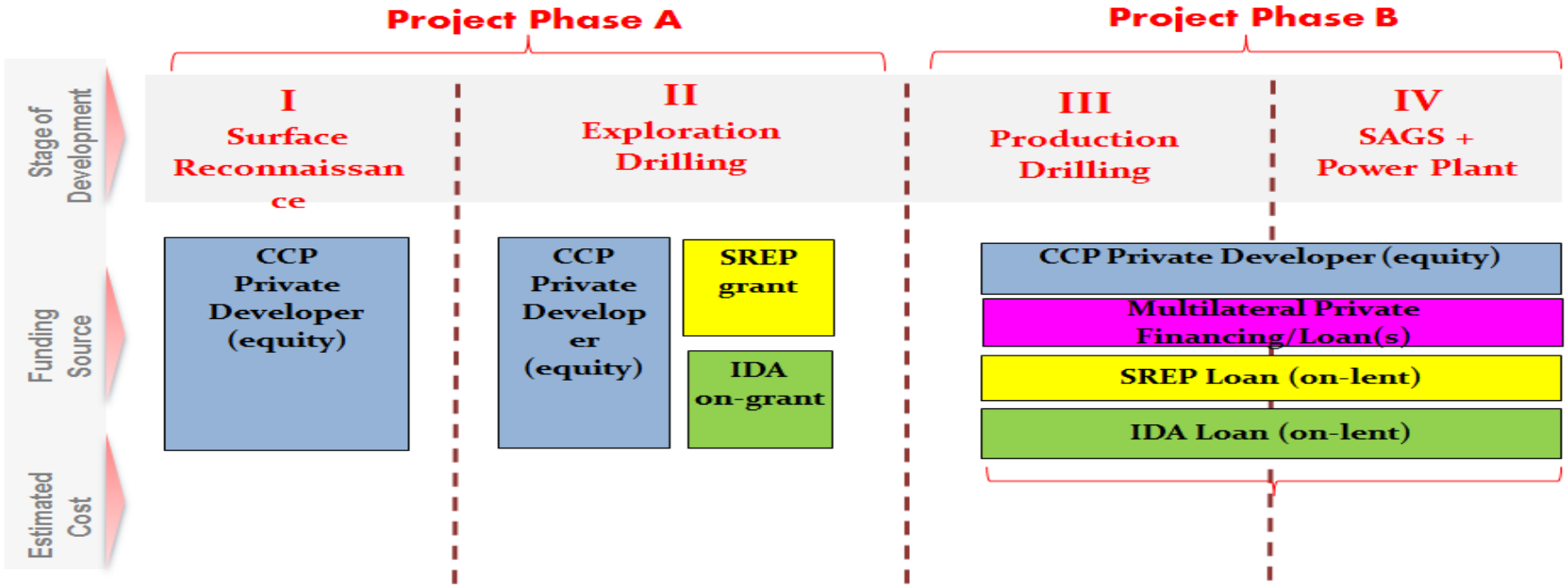
- Masaya Caldera

PROJECT CONCEPT:
Geothermal Risk Mitigation Project in Nicaragua

OBJECTIVES OF GOVERNMENT:

- Public-Private Partnership for Geothermal Development
- Lower electricity tariff at competitive prices
- Guarantee the implementation of projects with renewable sources
- Attract foreign investment.

Illustrative Funding Structure



Current PPP Structure for Casitas-San Cristobal

Thank you for your attention

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NICARAGUA