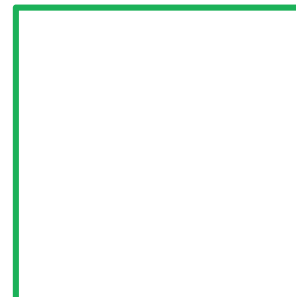


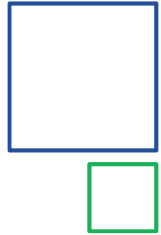
Enel Green Power

Geothermal opportunities in Kenya

IRENA - Global Geothermal Alliance

Nairobi - June 15th, 2015





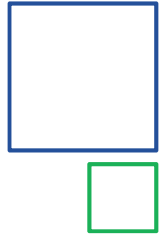
Agenda



I. EGP global footprint in renewable energy

II. EGP geothermal asset value maximization

III. EGP Development of geothermal in Kenya



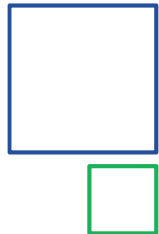
Agenda



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Global footprint in renewable energy¹



North America

2.1 GW in operation
0.4 GW under construction
5.1 GW pipeline

Europe

5.8 GW in operation
0.1 GW under construction
4.0 GW pipeline

Latin America

1.7 GW in operation
1.0 GW under construction
12.4 GW pipeline

Africa

10 MW in operation
0.5 GW under construction
4.5 GW pipeline
Of which:
0.7 GW awarded in 2015

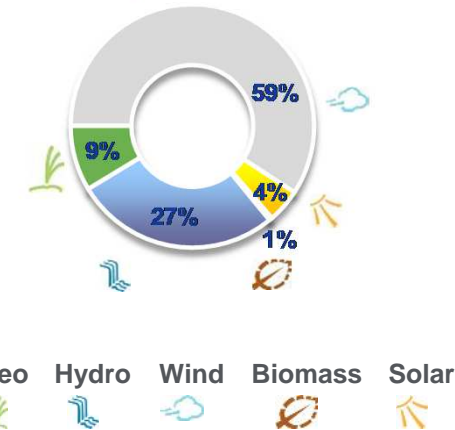
■ Countries of presence

■ Countries of active development

■ Areas under screening

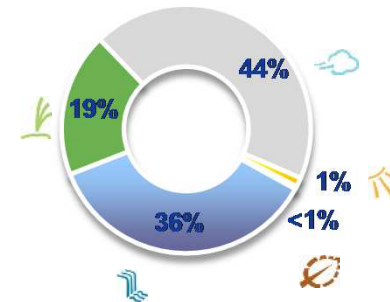
Total capacity by technology

9,626 MW

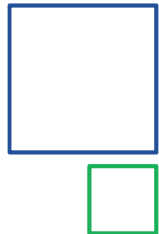


Total production by technology

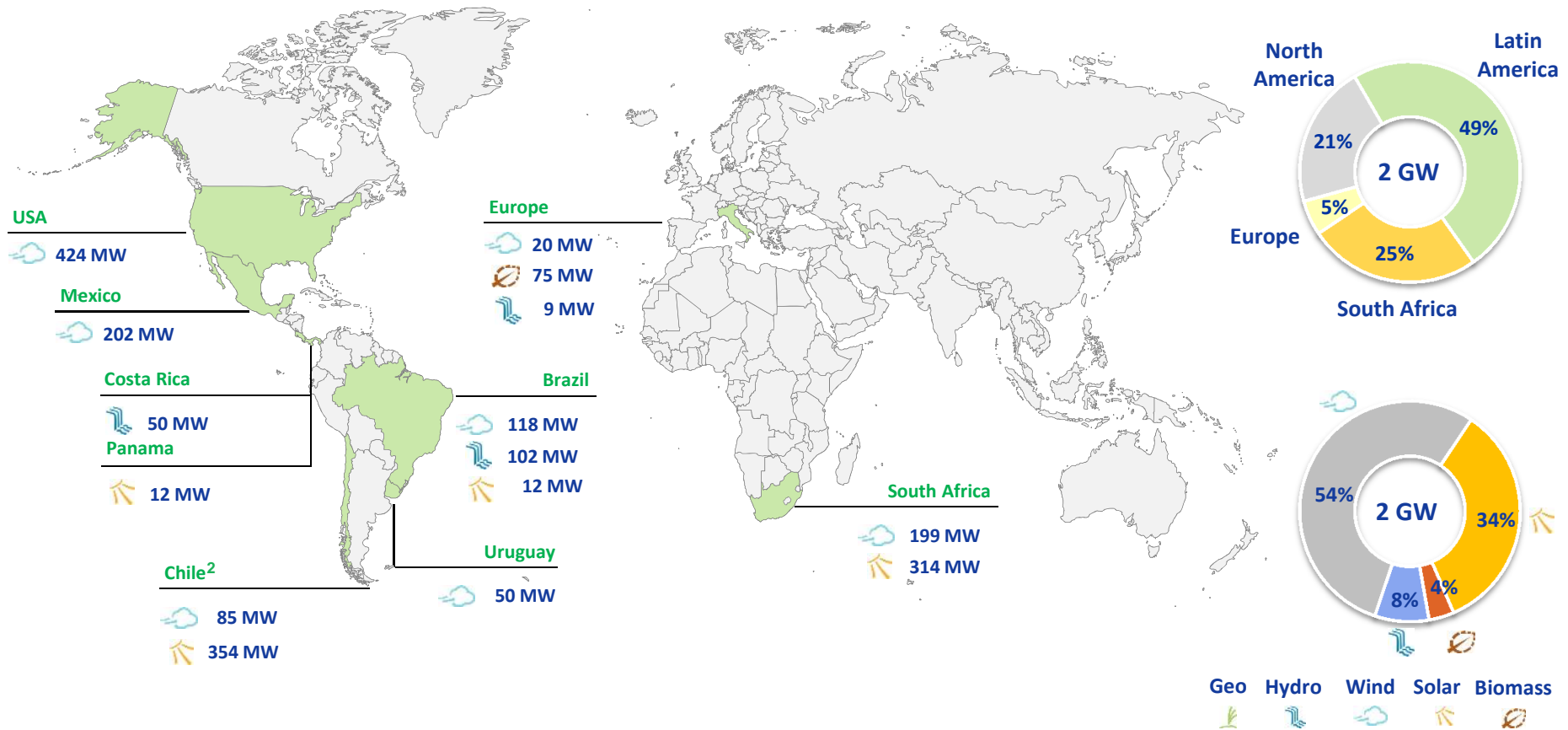
31.8 TWh



1. As of December 31st, 2014



Enel Green Power Projects in execution¹



1. Projects under construction or ready to build as of December 31st, 2014. It includes 102MW Sureste wind farm in Mexico and 61MW Talinay Poniente wind farm in Chile, both entered into operation in March 2015
 2. Cerro Pabellon geothermal plant (phase I of 50 MW) is starting execution



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Geographical presence and pipeline evolution



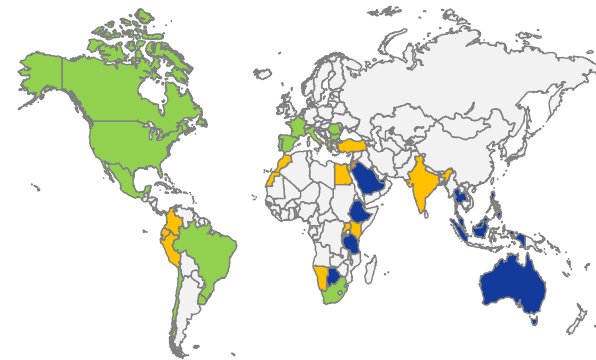
2011 presence

- 16 countries of presence

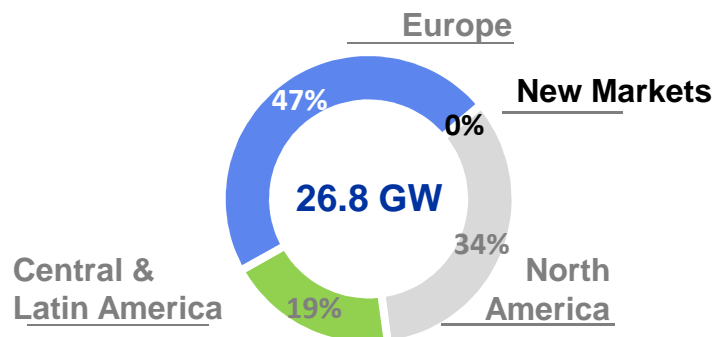


Today's presence

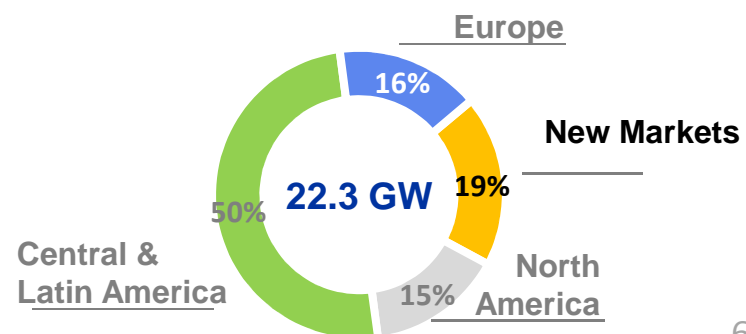
- 16 countries of presence
- 8 countries in advanced development phase, incl. **Kenya**
- 3 new areas under screening, incl. **East Africa**

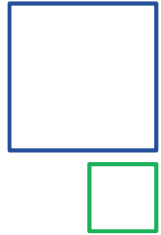


2011 pipeline



Today's pipeline





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Global geothermal footprint



USA - Nevada

- › Still Water : 33.10 MW + 26.4 MW PV + CSP
- › Salt Wells : 13.40 MW

USA - Utah

- › Cove Fort GEO : 25 MW

Italy

- › Larderello : 761 MW

Chile

- › Cerro Pabellon Phase I: 50 MW

-  In Operations
-  Under Construction
-  Potential Growth Areas

836 MW in operations and 50 MW under construction

Scouting for new opportunities in East Africa and Asia Pacific



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EGP and Geothermal history



1870 – mining extraction



1913– geothermal electricity



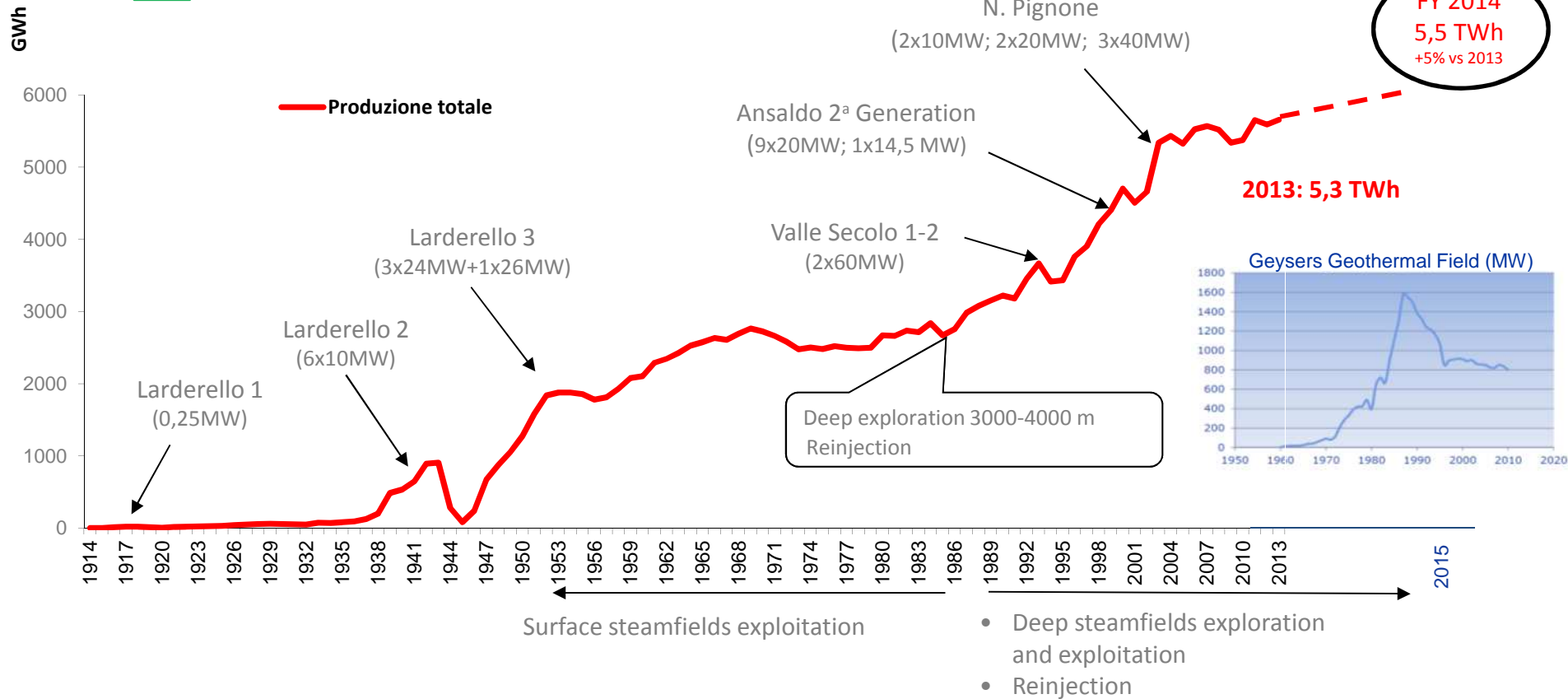
TODAY:
Production
Innovation
Environment
Community integration



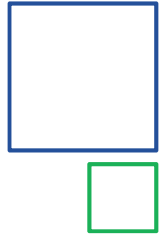
Current Capacity: 761 MW, Status: in operations since 1913
world's first geothermal project

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Integrated steam-field management

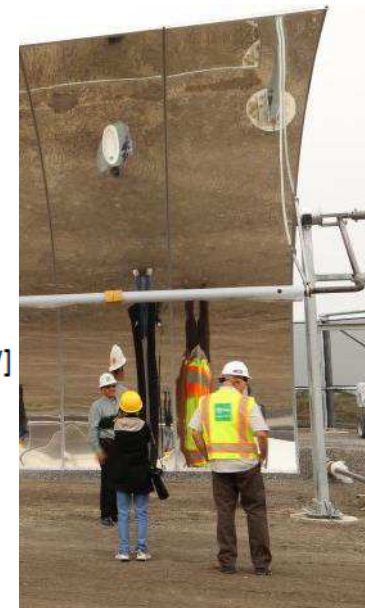
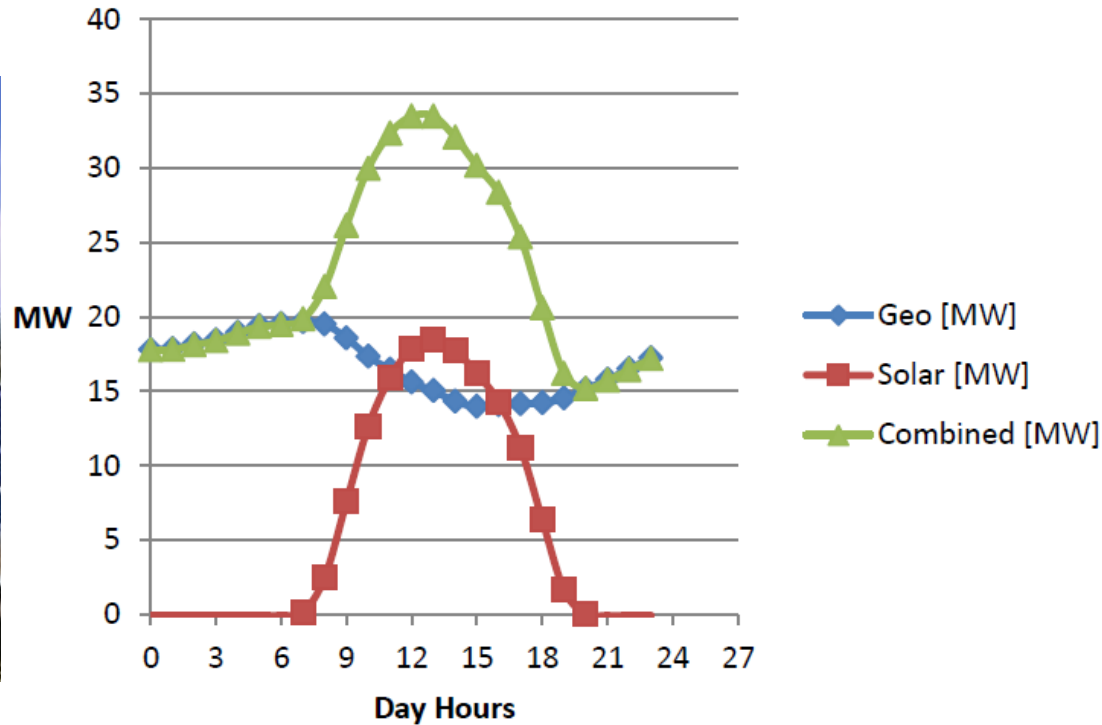


Stable production growth in more than 100 years

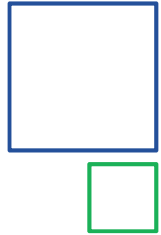


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Technology innovation: Geo + Solar PV, CPS, Biomass



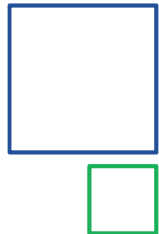
- › Project: Stillwater, Nevada, USA
- › Capacity: 33.10 MW + 26.4 MW PV + CSP
- › Status: in operations
- › Key Features: **world's first hybrid solar-geothermal power plant** with PV and CSP
- › Other hybrid project in operation in Italy with Geo + Biomass



Enel Green Power Project Complexity



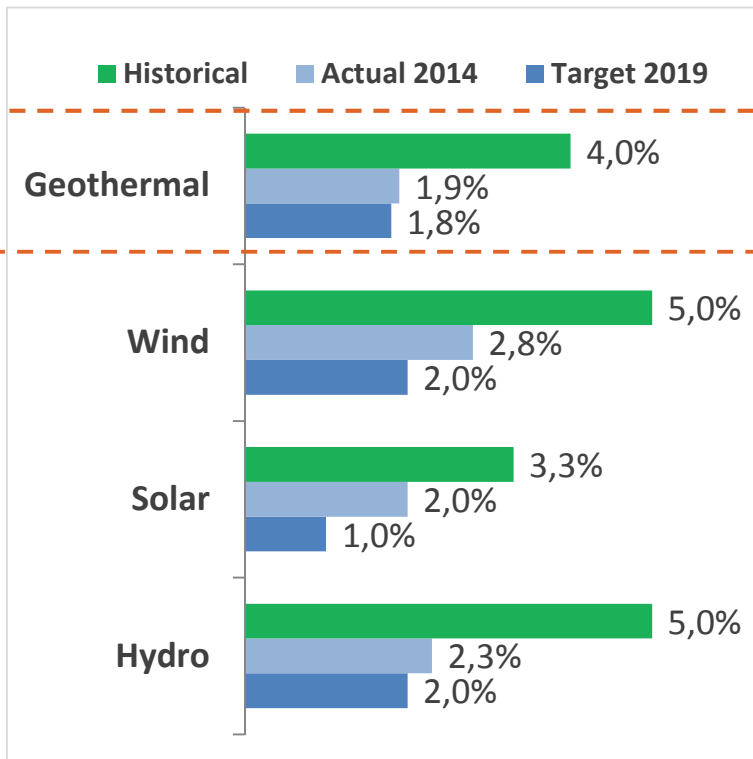
- › Project: Cerro Pabellon Phase I, Chile
- › Capacity: 50 MW (Binary cycle)
- › Status: exploration completed, starting power plant construction
- › Key Features: located in the “Pampa Apacheta” desert at **4,300 meters above sea level**



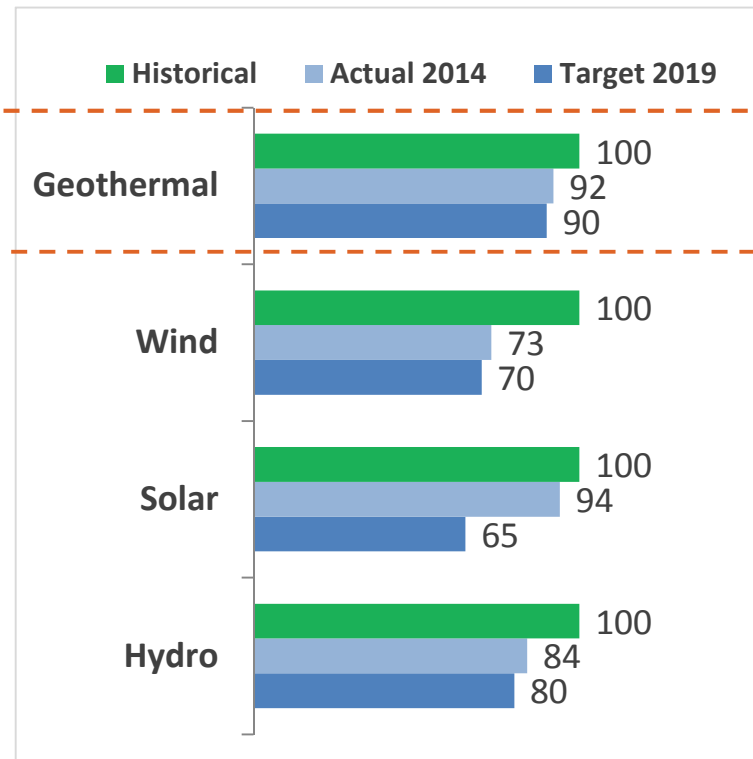
Enel Green Power Operational Excellence



Lost production factor

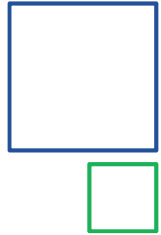


O&M Costs/MW¹



**8% reduction in geothermal O&M costs achieved,
2019 target almost met**

1. Normalized on 2011 for hydro, wind, geo and on 2013 for solar



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Geothermal in Kenya:

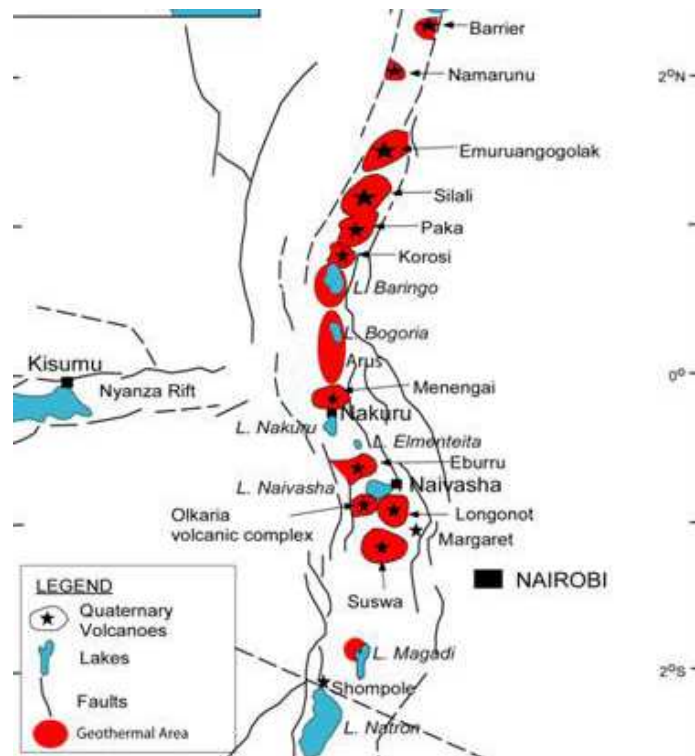


Resource, investors and opportunities



Resource

- Currently ~600 MW in operation
- **Potentially ~10,000 MW to be developed**



Investors

Traditional large geothermal industrial players willing to invest in Kenya on integrated projects

Financial investor willing to invest in advanced developed project (after exploration)

Opportunities

Kengen

GDC - Geothermal Development Company

Greenfield local private developers owning few geothermal licenses



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Geothermal in Kenya:



Resource, investors and opportunities



Opportunities

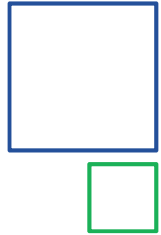
Kengen	Focused only within Olkaria field, almost completely exploited
Local developers	Lack of technical know-how and financial capability to develop geothermal projects
GDC	Institution fully dedicated to de-risking geothermal prospects and fast-tracking private investments Delays due to the number of geothermal field to be developed in parallel

Investors

Limited space for further significant development
Too big gap between international investors and local developer
Good opportunities in upcoming tenders and PPP Impossible to fully exploit Kenyan geothermal resources alone and quickly

... is there another way to speed up geothermal?

- To select a **number of geothermal field/licenses** to be developed starting greenfield
- To issue a public international **prequalification process** to select **large industrial geothermal players able to commit into deep exploration**, exploitation and power conversion, on a defined timeline
- To assign licenses to committed prequalified players



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EGP value proposition for geothermal



Willing to develop a geothermal license **only investing in the whole value chain,**

Enel Green Power is able to take exploration risks

Creating Share Value to local energy industries by bringing geothermal expertise:
EGP has developed the geothermal technology worldwide whilst transferring value locally
(i.e. training, side and complementary businesses)

Dedicating resources to one new geothermal exploration front at a time:

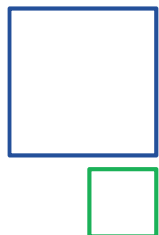
East Africa region is among the best spots worldwide

Project quality and timing toward internal competition

Addressing DFIs facilities or grants **more efficiently** as an industrial investor

Geothermal investment is never completely de-risked

→ ever a play for large industrial players



ENERGY TO LIFE