



MÉXICO-ALEMANIA
DIÁLOGOS POR UN FUTURO SUSTENTABLE | ENERGÍA DE RESIDUOS

FORO INTERNACIONAL 2015 VALORIZACIÓN ENERGÉTICA DE RESIDUOS URBANOS

Experiencias y estrategias globales

México, D.F. 8 de octubre del 2015

RELLENO SANITARIO DE UTILIZACIÓN DE GAS

UNA PERSPECTIVA DE UN DESARROLLADOR

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Gerente de Pais / Director de Negocios - ENER-G, S.A. de C.V.

MÉXICO
GOBIERNO DE LA REPÚBLICA



SENER
SECRETARÍA DE ENERGÍA

SEMARNAT
SECRETARÍA DE
MEDIO AMBIENTE
Y RECURSOS NATURALES



Embajada
de la República Federal de Alemania
Ciudad de México



cooperación
alemana
DEUTSCHE ZUSAMMENARBEIT

giz Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH

PRESENTATION AGENDA



INTRODUCTION

PHILOSOPHY

MEXICO

AGUASCALIENTES

SUMMARY

A decorative graphic in the bottom-left corner consisting of three curved lines in blue, green, and yellow, similar to the ENER-G logo.

INTRODUCTION | *PHILOSOPHY* | *MÉXICO* | *AGUASCALIENTES* | *SUMMARY*



IAN COOPER (Background)

- **Civil Engineer (IENG AMICE)**
- **Worked in the waste industry since 1992**
- **Designed, constructed and operated waste facilities, including landfills/recycling centres**
- **ENER-G since 2006. Developed projects in the UK, Spain, Hungary, Poland, Romania, Morocco and of course MEXICO**
- **Worked in Mexico for 5 years**
- **2014 became Head of the Green Power Group in Mexico City**



ENER-G (Background)

Established in the last 1990's, the ENER-G Group has grown through acquisitions and strategic investment in new territories, and is one of the market leaders in providing energy efficient solutions in many countries.





RENEWABLES DIVISION

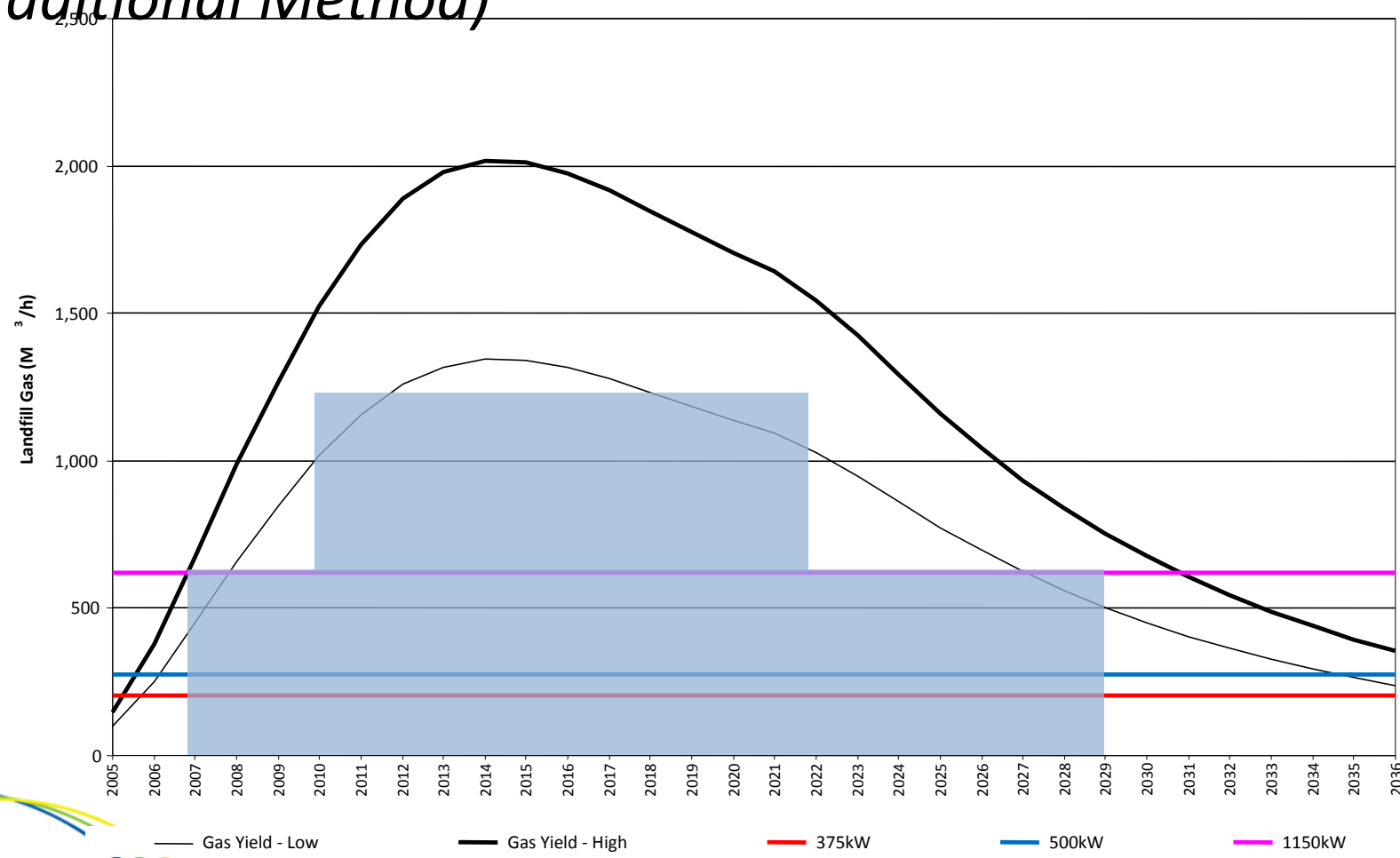
- **Designed / Constructed / Operates – c.170MW**
- **c.20MW in development in South Africa**
- **238 Landfills in México, of which approximately 70 are viable for generating power**
- **Plans to contract 10-20MW in Mexico**
- **In Mexico alone we have destroyed enough landfill gas to be able to generate over 1,000,000 Certified Emissions Reductions**





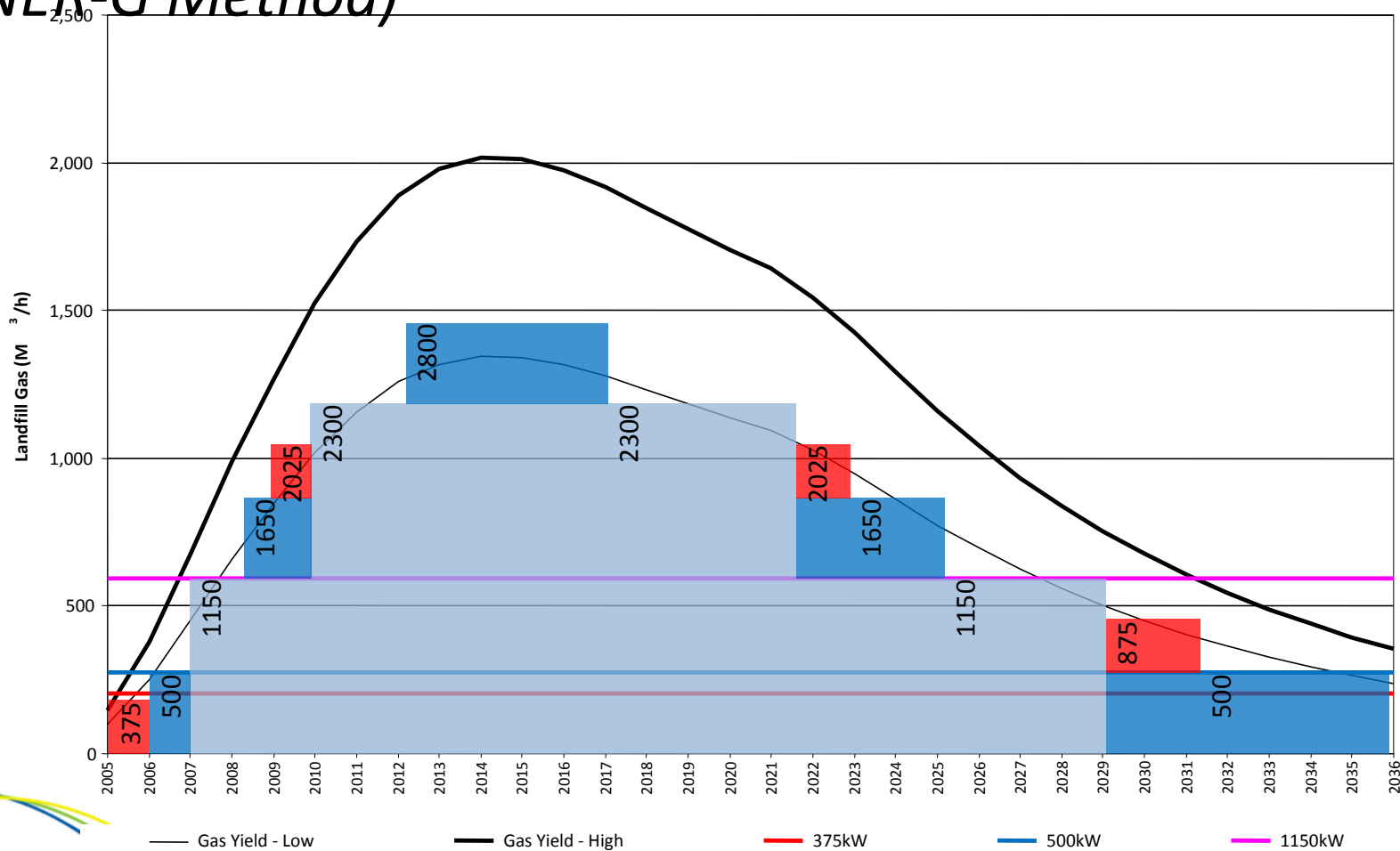
OPTIMISED BIOGAS UTILIZATION

(Traditional Method)



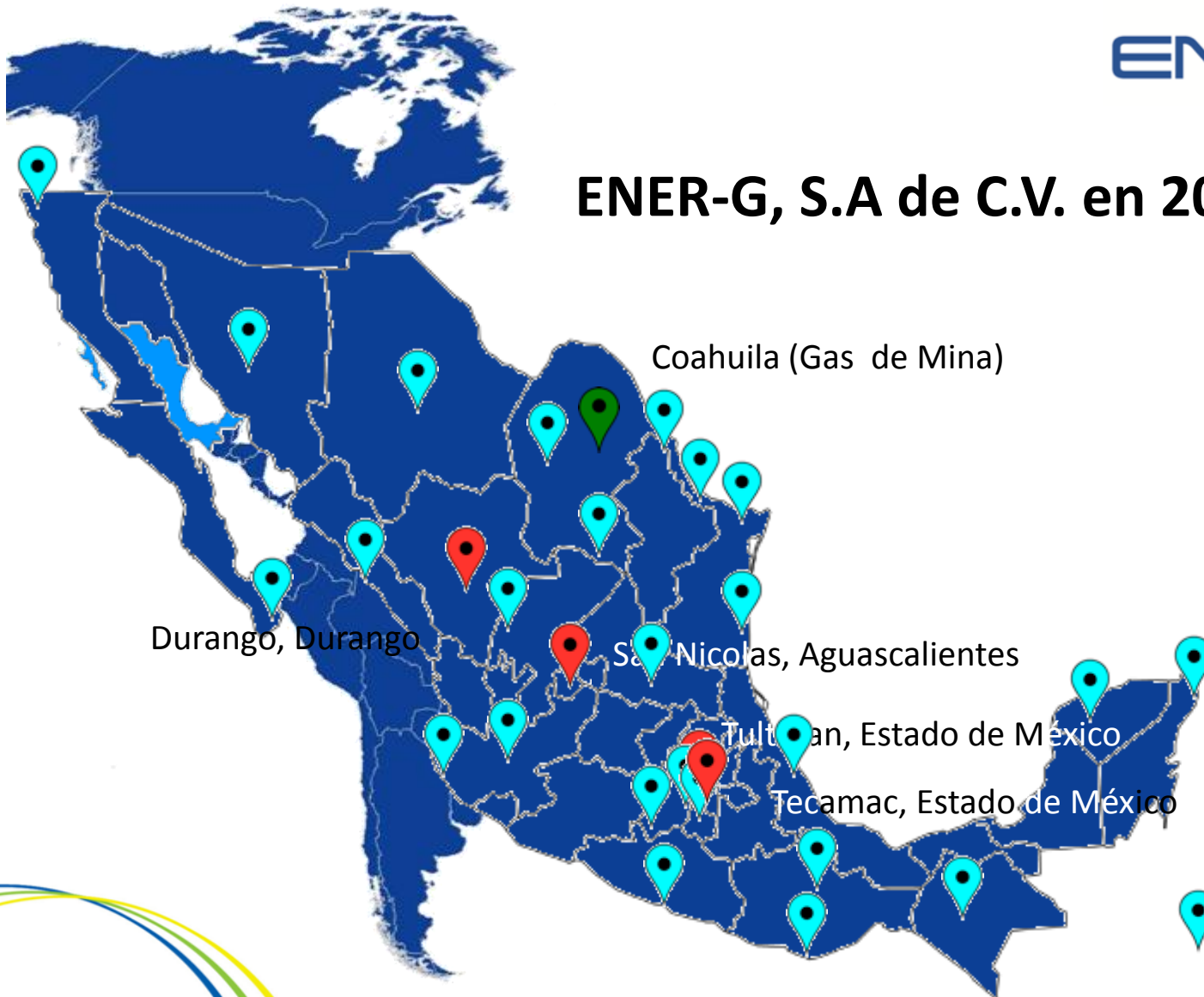


OPTIMISED BIOGAS UTILIZATION (ENER-G Method)





ENER-G, S.A de C.V. en 2015



On going Business

Development

OVERVIEW

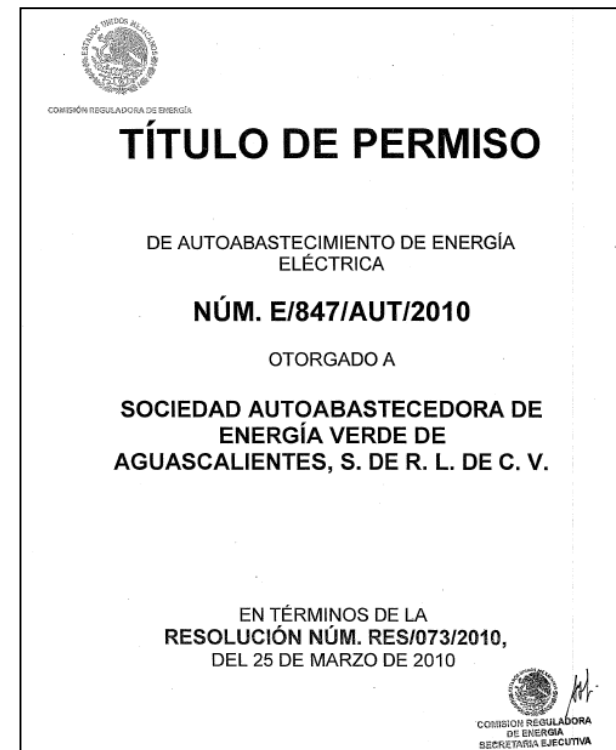
- Initial contract signed in 2006 in accordance with KYOTO Protocol (CDM) and registered with UNFCCC.
- After the global crash in 2008, carbon prices fell and the project moved towards power generation
- Opening Ceremony 14 April 2009



OVERVIEW



- Initial contract signed in 2006 in accordance with KYOTO Protocol (CDM) and registered with UNFCCC.
- After the global crash in 2008, carbon prices fell and the project moved towards power generation
- Opening Ceremony 14 April 2009
- Commissioned December 2011
- Autoabastecimiento – SAEVA





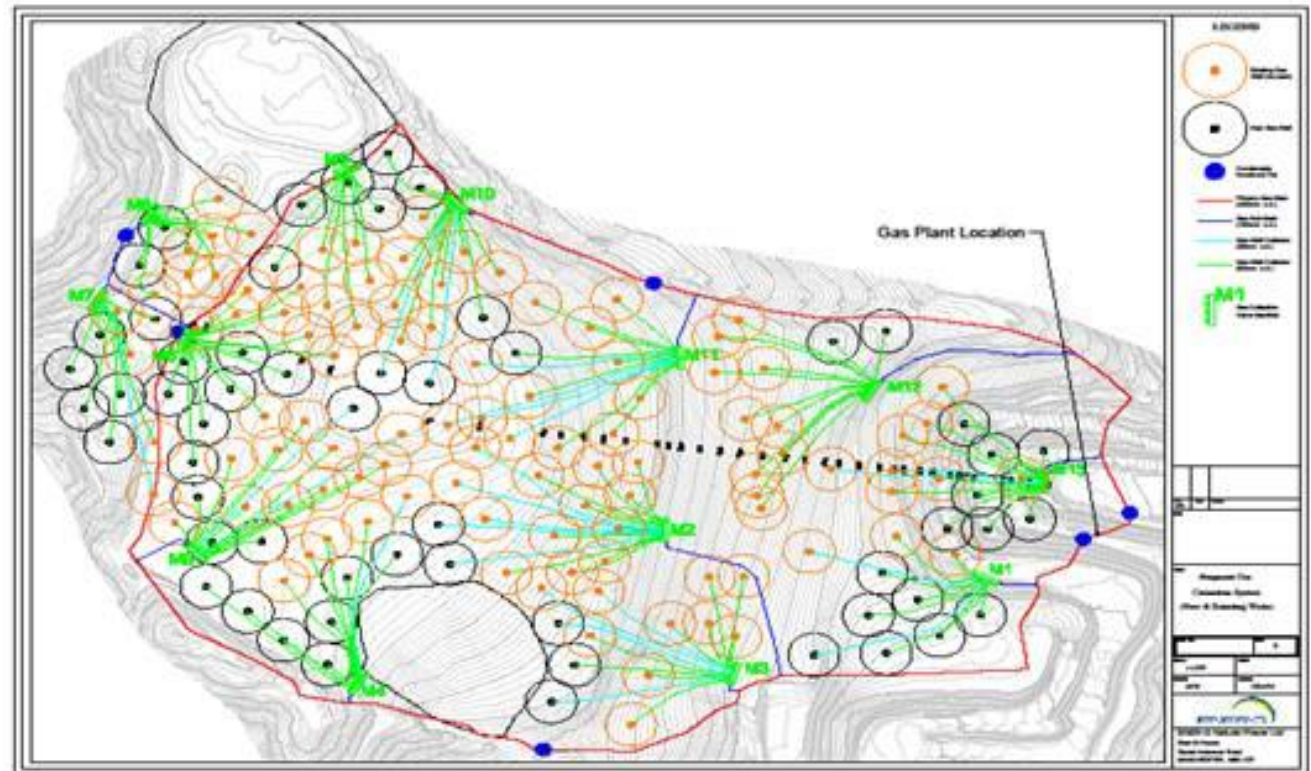
Decision to Develop

- **Already invested in the CDM project**
- **Improving Electricity Price**
- **Discussions with Nissan Mexicana**
- **Environmental Compliance**

TECHNICAL DETAILS



- Approximately 220 gas well



TECHNICAL DETAILS



- **Approximately 220 gas well**
- **Flares and boosters**
- **Connection to the CFE grid (3.2MW)**
- **2 Caterpillar 3520 (1.6MW) installed initially**
- **3 site based Engineers / Technicians**



Why Choose This Technology ?



TECHNICAL DETAILS



- Robust and Cost Effective



- Ease of Operation



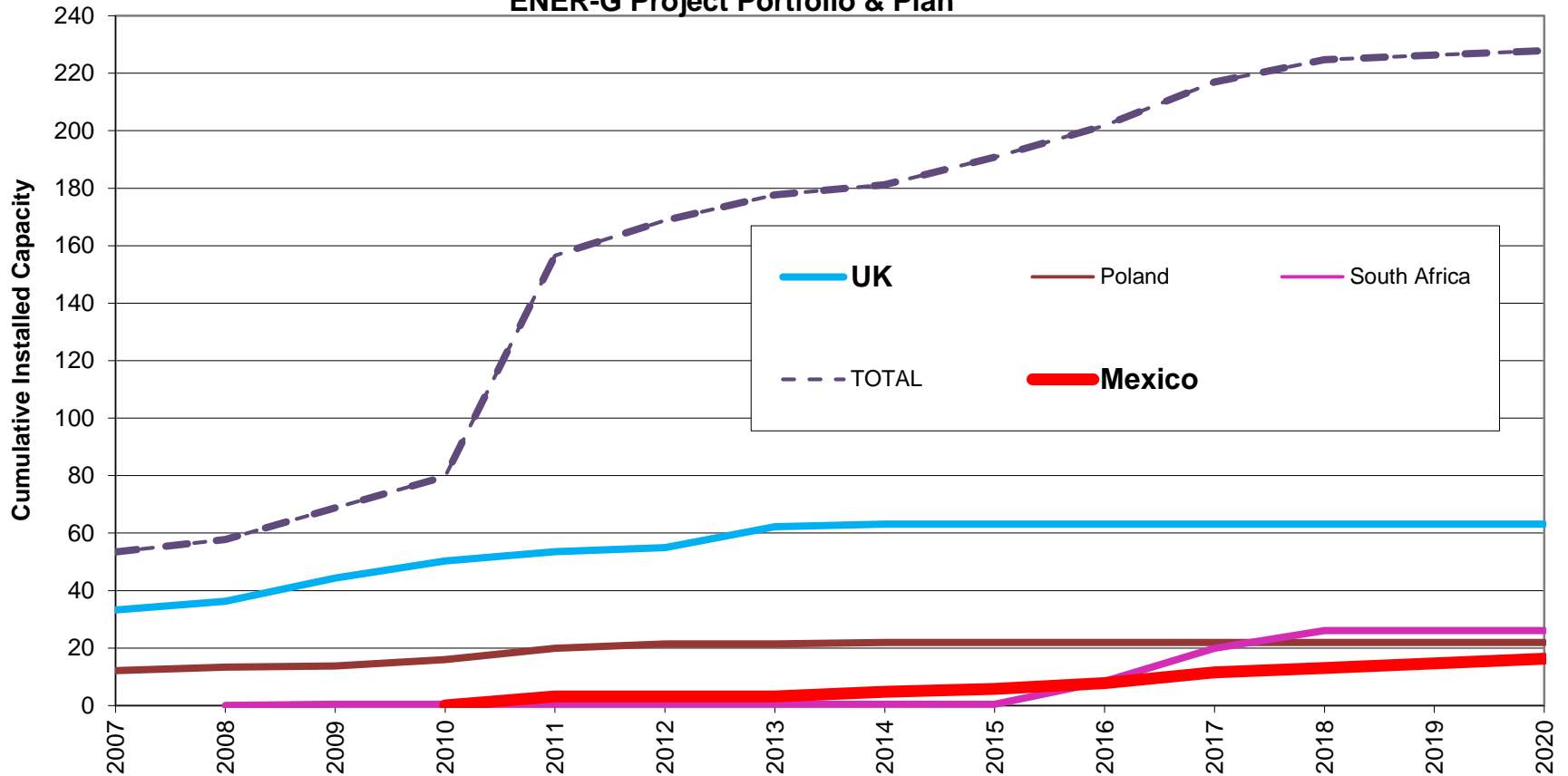
- A Global Network of Spare Parts



PROVEN TRACK RECORD



ENER-G Project Portfolio & Plan



Challenges



- **Construction delayed due to the price of electricity**
- **Obtaining authorization from the CRE**
- **Obtaining authorization from the CFE**
- **Labour intensive**

Advantages



- **Public perception**



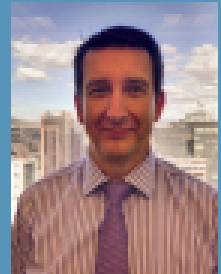
Messages from Our Stakeholders

When ENER-G entered Mexico approximately 10 years ago, we were purely looking at carbon destruction opportunities under the Clean Development Mechanism of the Kyoto Protocol. With the changing economics and requirements for better environmental control on waste management facilities, the focus moved to renewable energy generated from landfill gas. ENER-G has been developing these types of projects now for 20 years, and has in excess of 170 MW of installed capacity around the world. These projects not only generate energy, they assist both the municipalities and our private-sector clients to meet their corporate social responsibilities in terms of dealing with waste and the byproduct, "biogas," which is well known to be a very harmful greenhouse gas.

ENER-G was delighted to be welcomed to look at the San Nicolas facility by the City and State of Aguascalientes, where Nissan also has its manufacturing facility. The landfill gas to energy project was successfully commissioned in December 2011 and through proactive discussions it was contracted that Nissan Mexicana, S.A. de C.V., would receive the electricity supplied by ENER-G.

The \$4.4 million investment by the ENER-G is reducing carbon dioxide emissions at the landfill site by approximately 90,000 tons per year. This is equivalent to the environmental benefit of 7,045 hectares (17,409 acres) of pine forest.

We are proud of our partnership with Nissan and the City of Aguascalientes in this project, and with further projects being developed in México we hope to be able to supply further renewable energy going forward.



Ian Cooper
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Country Manager,
Mexico
Business Development
Director—Landfill &
Specialist Gases
(México, Romania,
Poland and the UK)
ENER-G S.A. de C.V.





THE FUTURE & OPPORTUNITES

- **Energy Reform**
- **Changes in the law (NOM083)**
- **Consolidation of the Waste Industry**
- **Waste To Energy (Gasification)**
- **Anaerobic Digestion from Food and Beverage(drinks) Wastes**

TEAMWORK





**ENER-G IS VERY PLEASED TO BE PART
OF THE REFORMS IN MEXICO**

Thank You For Your Attention

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