



Geothermal District Heating in China Building on the Icelandic Experience

Jarðhitavæðing í Kína – Uppbygging á íslenskum
grunni

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Something is Wrong



Seoul, South Korea, 2017



Almaty, Kazakhstan 2017



Kathmandu, Nepal, 2017



Ulaanbaatar Mongolia, 2017



Teheran, Iran, 2017



New Delhi, India, 2017



Beijing, China, 2017



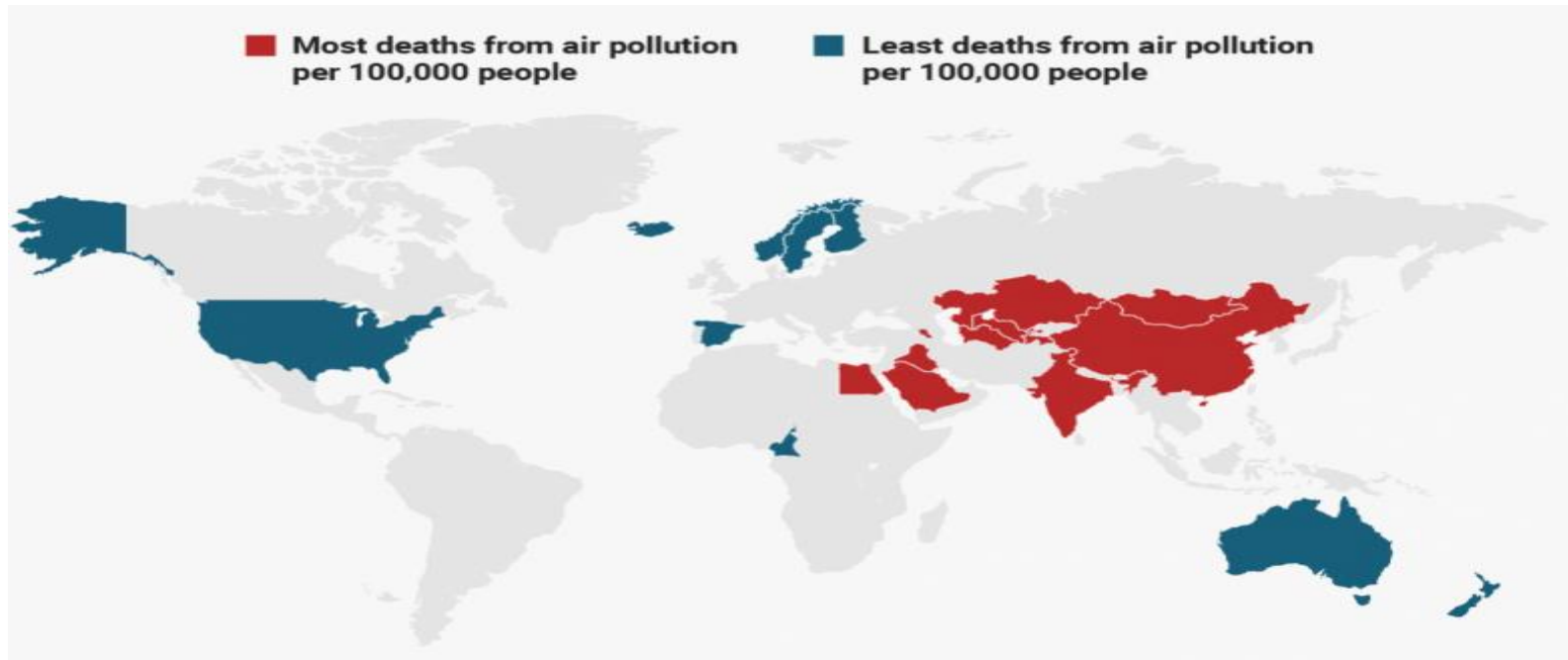
Lahore, Pakistan, 2017



Ankara, Turkey, 2017

Air Pollution & Public Health

Countries with the Most and Least Deaths from Air Pollution



International Energy Agency & World Health Organization

Air Pollution costs more than USD 5 trillion/year in Social Welfare*

Air Pollution, claims more than 6,5 million lives a year*

*The Lancet 2017

** The World Health Organization 2016

The World's Biggest Energy Challenge is....



Heating & Cooling Cities

Geothermal Energy is the Natural, Intelligent Choice for
Heating and Cooling
Cities

Reykjavik Today



Reykjavik Before Geothermal Heating



Arctic Green Energy at a Glance

Global renewable energy company, focusing on Zero Emission Cities and the fights against air pollution and greenhouse emissions

Strong roots in Iceland, the world's most successful renewable energy country, operations across in five countries.

One of two owners of and significant investment in Sinopec Green Energy, the world's largest and fastest geothermal district heating company with presence in over 50 cities and counties in China

Highly experienced executive management team with a proven track record of achieving high growth and profitability in renewables

From the world's largest geothermal district heating company to a global leader in renewable and zero emission cities



Stærsta verkefni Íslendinga í umhverfismálum er í Kína

Heimir Már Pétursson skrifar · 21. maí 2019 20:30

Líkar þetta 342



Iceland – China Geothermal Cooperation

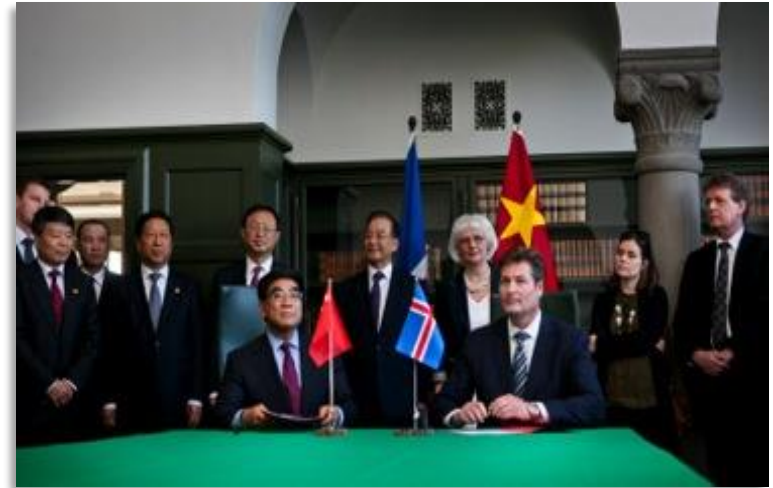


Arctic Green Energy - Success in Asia



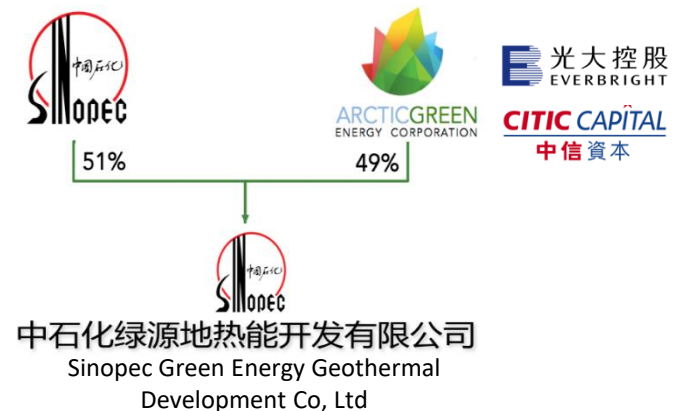
Sinopec Green Energy

- Joint Venture with Sinopec
- Established 2006, profitable since 2009
- World's largest and fastest growing geothermal heating company
- Market leader in China both in terms of size and technological advancement
- Has rights to the most valuable concessions in China
- Owns some of the industry's most valuable patents
- Already in over 50 cities and counties in China including Xiong'an New Area



Arctic Green Energy in Kazakhstan

December 2018, Arctic Green Energy entered into MoU for strategic joint venture in exploring geothermal potential in Kazakhstan.



An Arctic Success has become a Chinese Success

Arctic Green is Iceland's largest contribution to global environmental & public health

40 million m² geoDH capacity

50 cities and counties with operations

7.500.000 tons of CO₂ saved

4,1 GWth generated

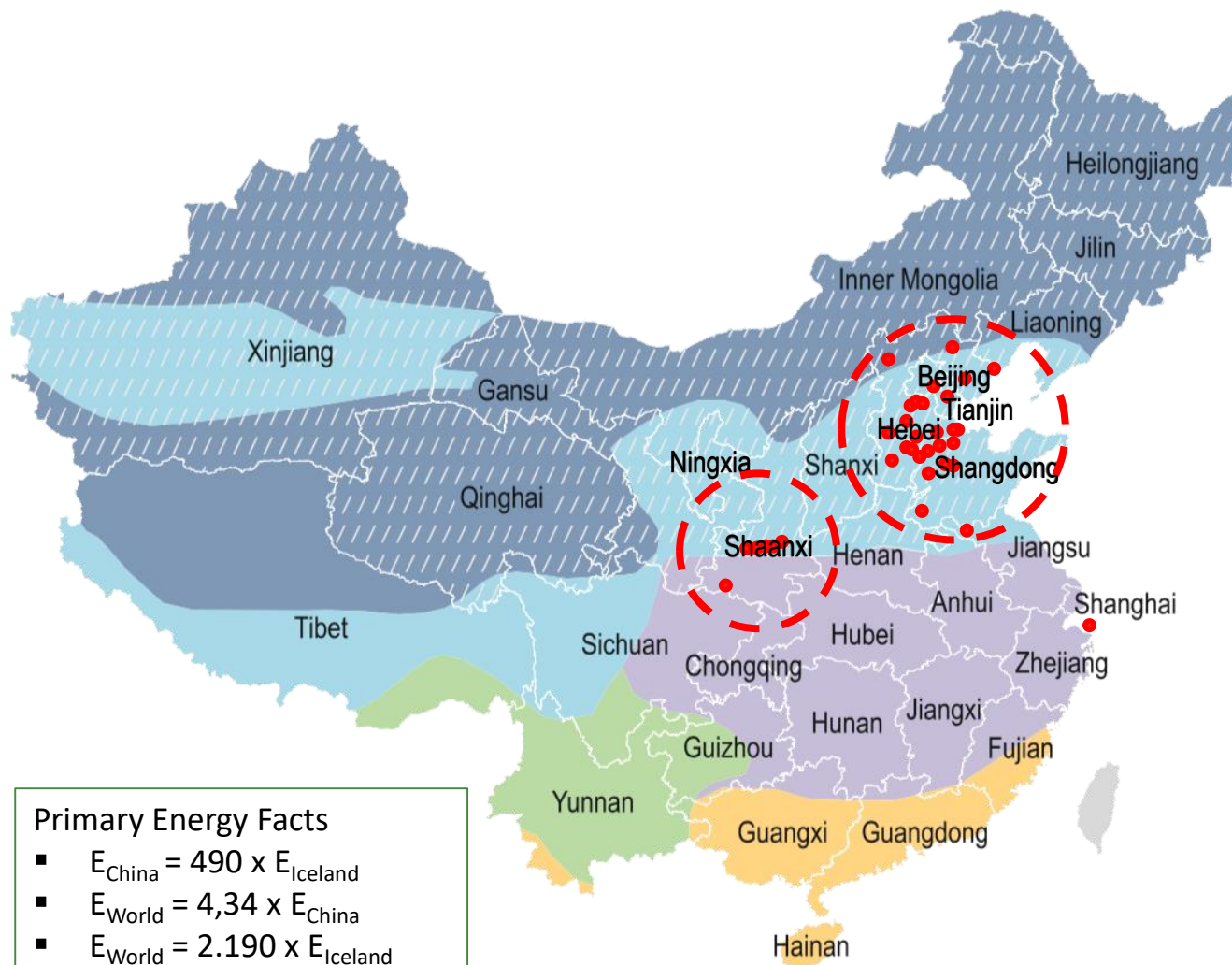
15 MWe generated

>50 patents registered

510 wells drilled



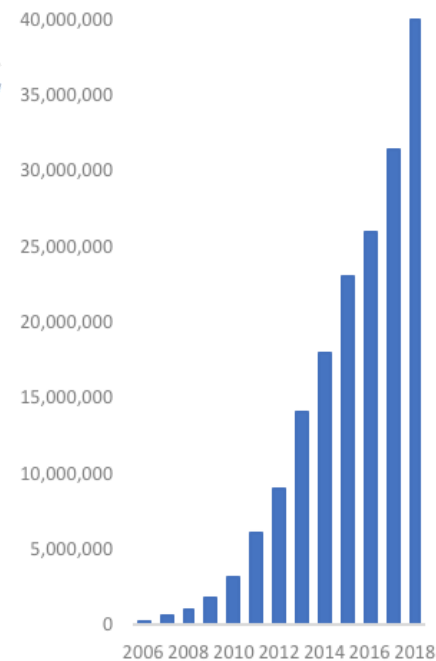
Sinopec Green Energy Today



Primary Energy Facts

- $E_{\text{China}} = 490 \times E_{\text{Iceland}}$
- $E_{\text{World}} = 4,34 \times E_{\text{China}}$
- $E_{\text{World}} = 2,190 \times E_{\text{Iceland}}$

Growth of SGE



- ▨ Northern Urban Heating area
- Severe cold
- Cold
- Temperate
- Hot summer / cold winter
- Hot summer / warm winter

The World has Huge Reserves of Undeveloped Geothermal Potential

- A large part of the world has some geothermal potential
- Geothermal Energy is the only renewable source that is base-load, on 24/7, and therefore, ideal for heating

Scaling Up

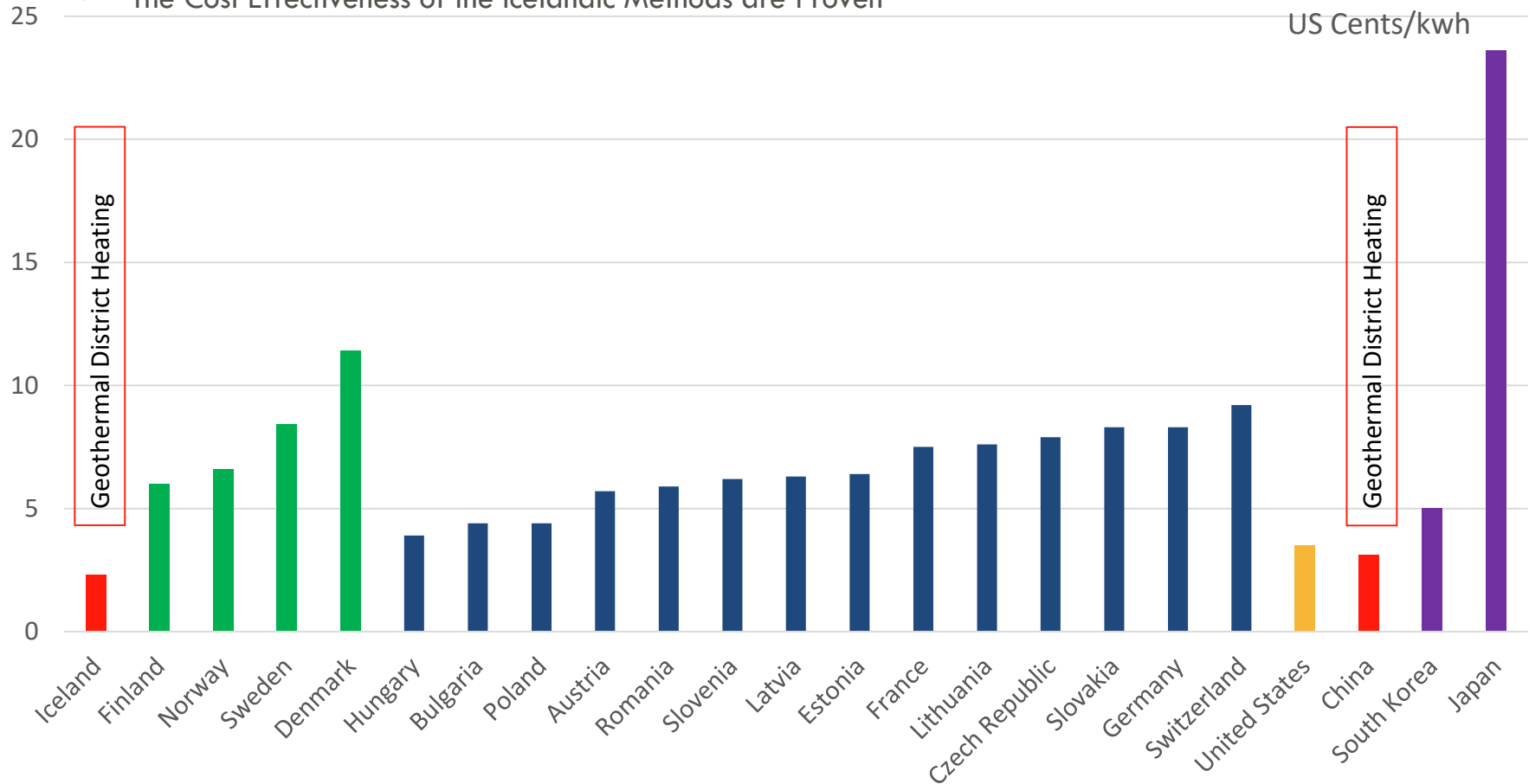
- Arctic Green will continue to build SGE with an increased momentum beyond IPO in China
- Planning on replicating the China model and launch similar projects around the world
- District cooling in tropical countries such as SE-Asia

One Belt One Road Focus



District Heating, Consumer Cost Comparison

- In Iceland & China the Energy Source is Geothermal with Clear Skies
- The Cost Effectiveness of the Icelandic Methods are Proven



Source: National Energy Authority of Iceland & Sinopec Green Energy

Cities Transformed by Geothermal Heating



Reykjavik Iceland



Xiongqian, Hebei (Xiongan)



Xianyang, Shaanxi



Shenghe, Shandong



Wugong, Shaanxi



Rongcheng, Hebei (Xiongan)



Shijiazhuang, Hebei



Langfang, Hebei

Signing of a Milestone Agreement with ADB



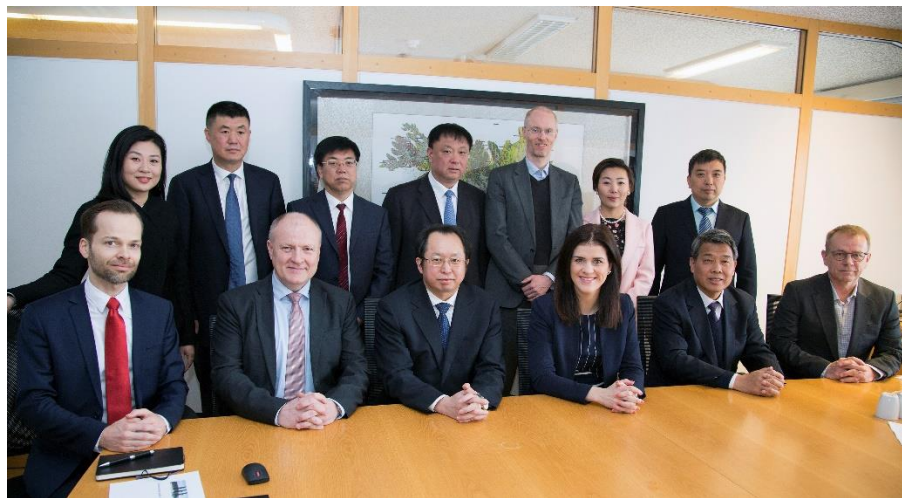
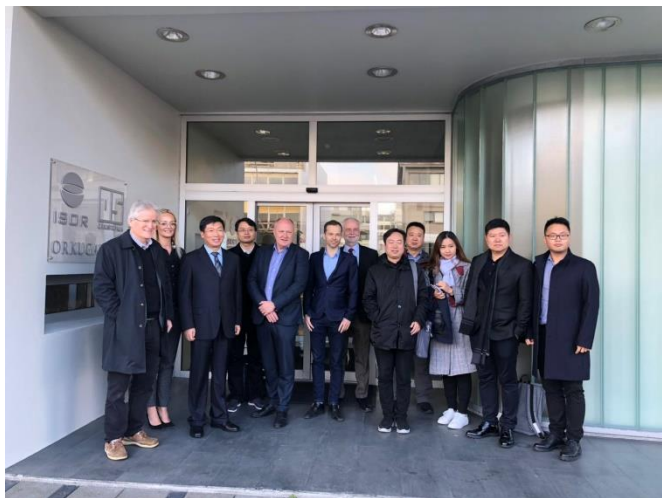
Signing of a Milestone Agreement with ADB



Delegations in Iceland



Delegations in Iceland



Thank You !



The Problem

- Massive Pollution, Environmental Damage, Deteriorating Public Health.

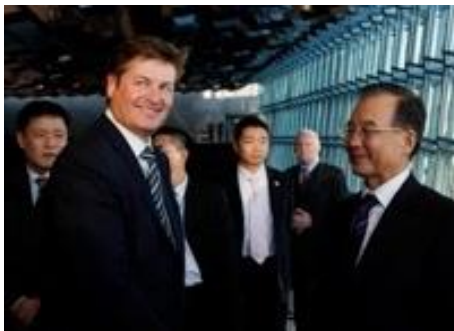


The Solution

- District Heating & Cooling of Cities using Geothermal with Co-Generation from other Renewables.



Zero Emission Cities with Zero Subsidies



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