



# **Boom and Bust: Tracking Global Proposed Coal Plants**

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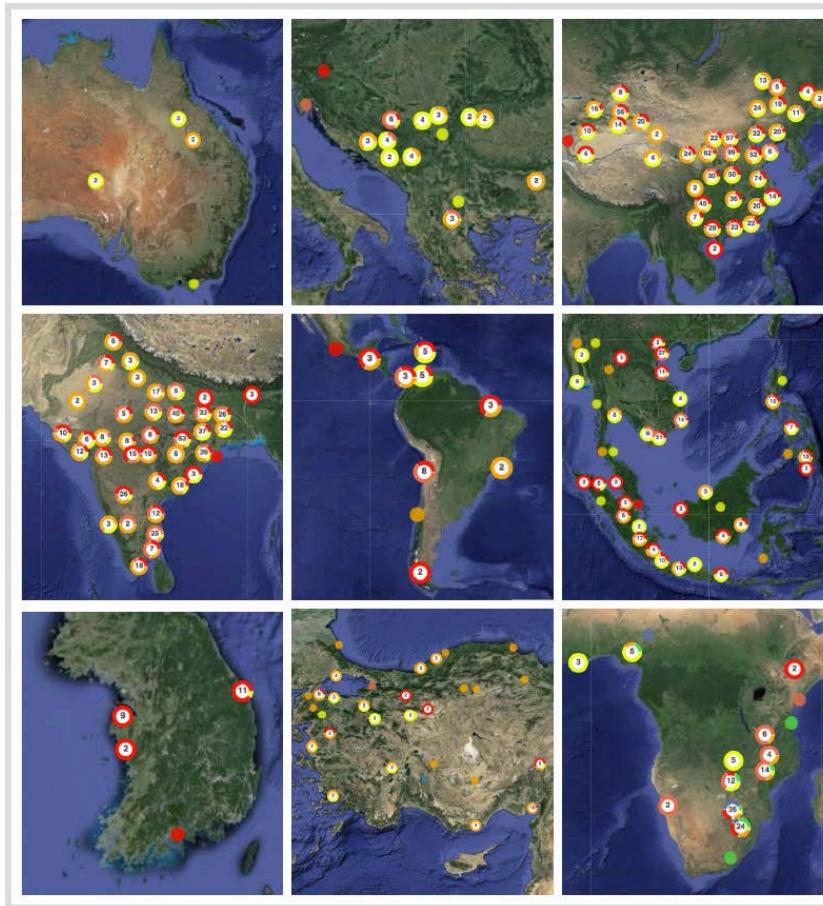
# Global Coal Plant Tracker

- **First public map and database** of proposed coal plants: **EndCoal.org**
- **Wiki pages on CoalSwarm.org** for each proposed plant
- **Multi-national effort** (US, Vietnam, Japan, Philippines, China, India, Turkey, Europe, and South America)
- **Ongoing updates** every 6 months

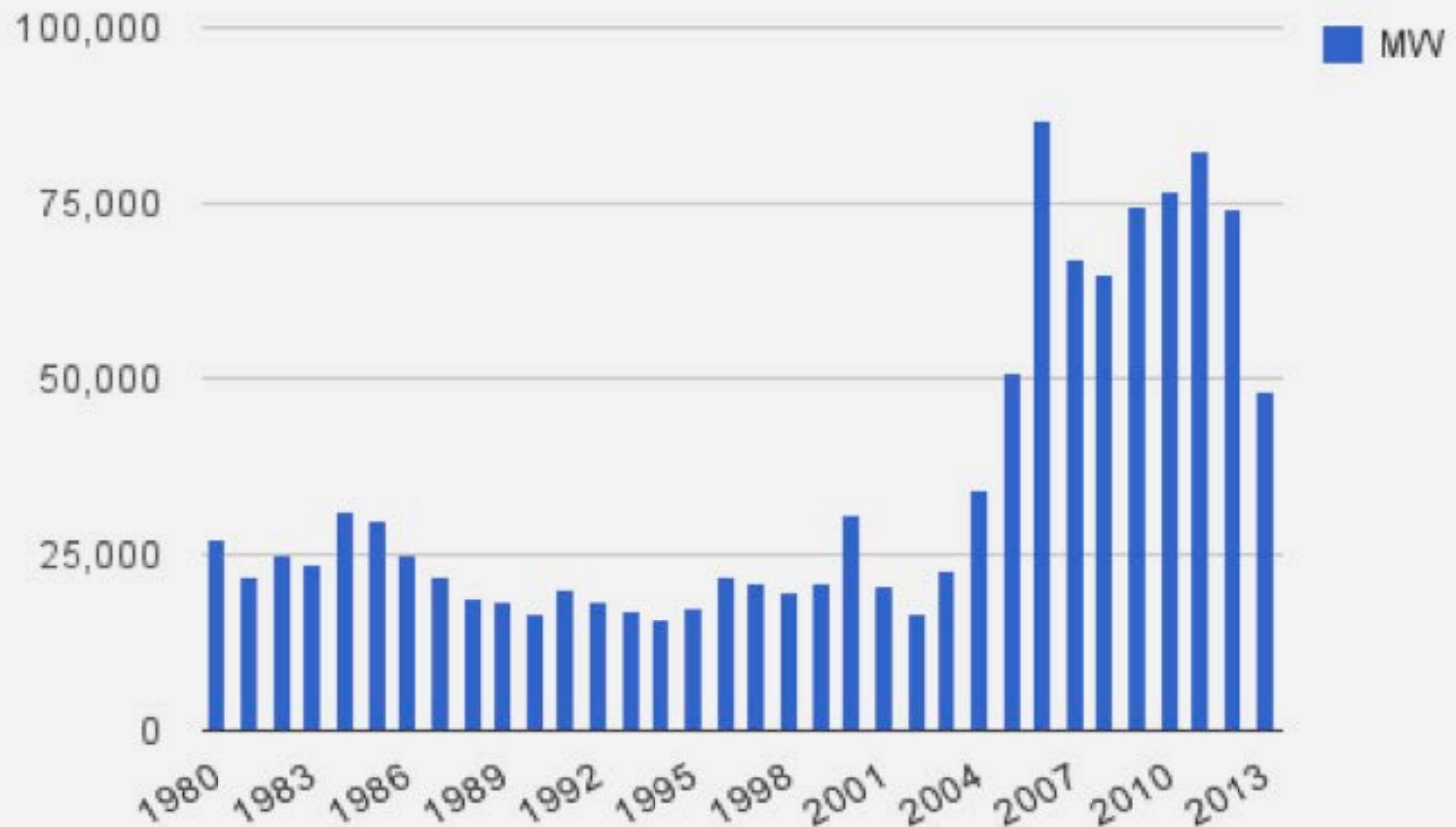
# Boom and Bust

## TRACKING THE GLOBAL COAL PLANT PIPELINE

Christine Shearer, Nicole Ghio, Justin Guay, Lauri Myllyvirta, and Ted Nace

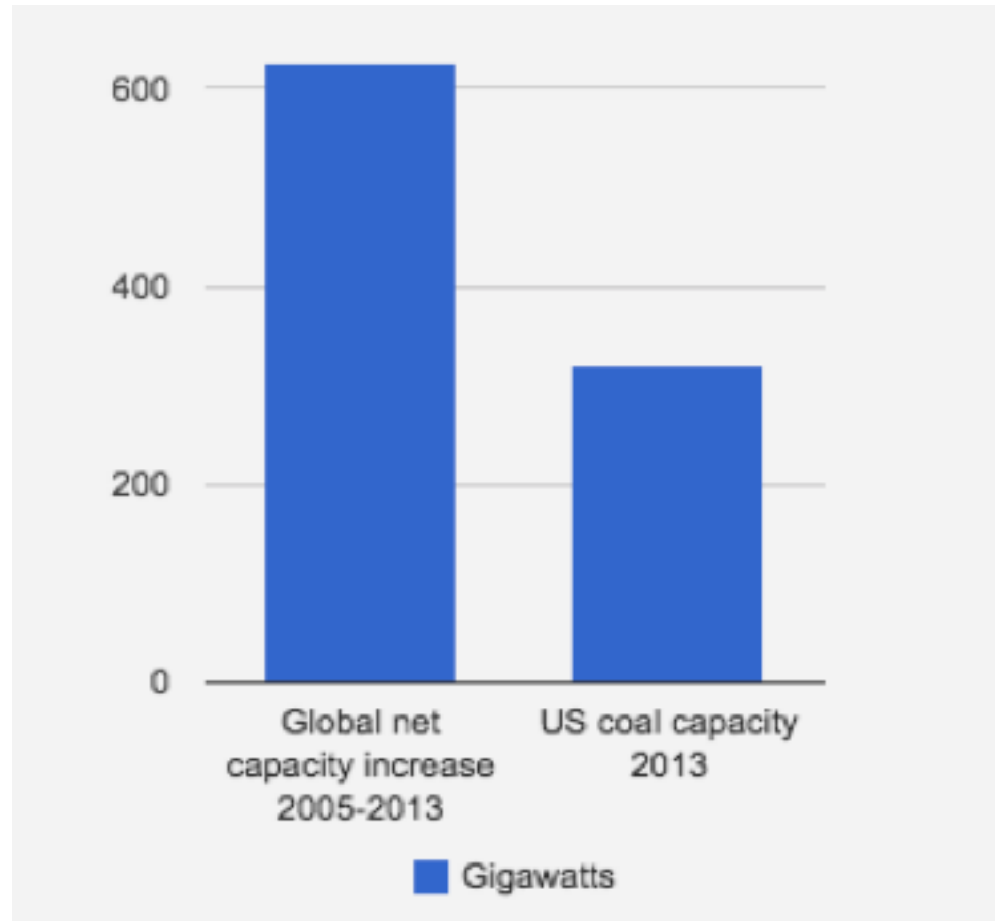


# Coal Boom: Net Global Coal Capacity Additions



Source: Platts WEPP January 2015 and CoalSwarm analysis

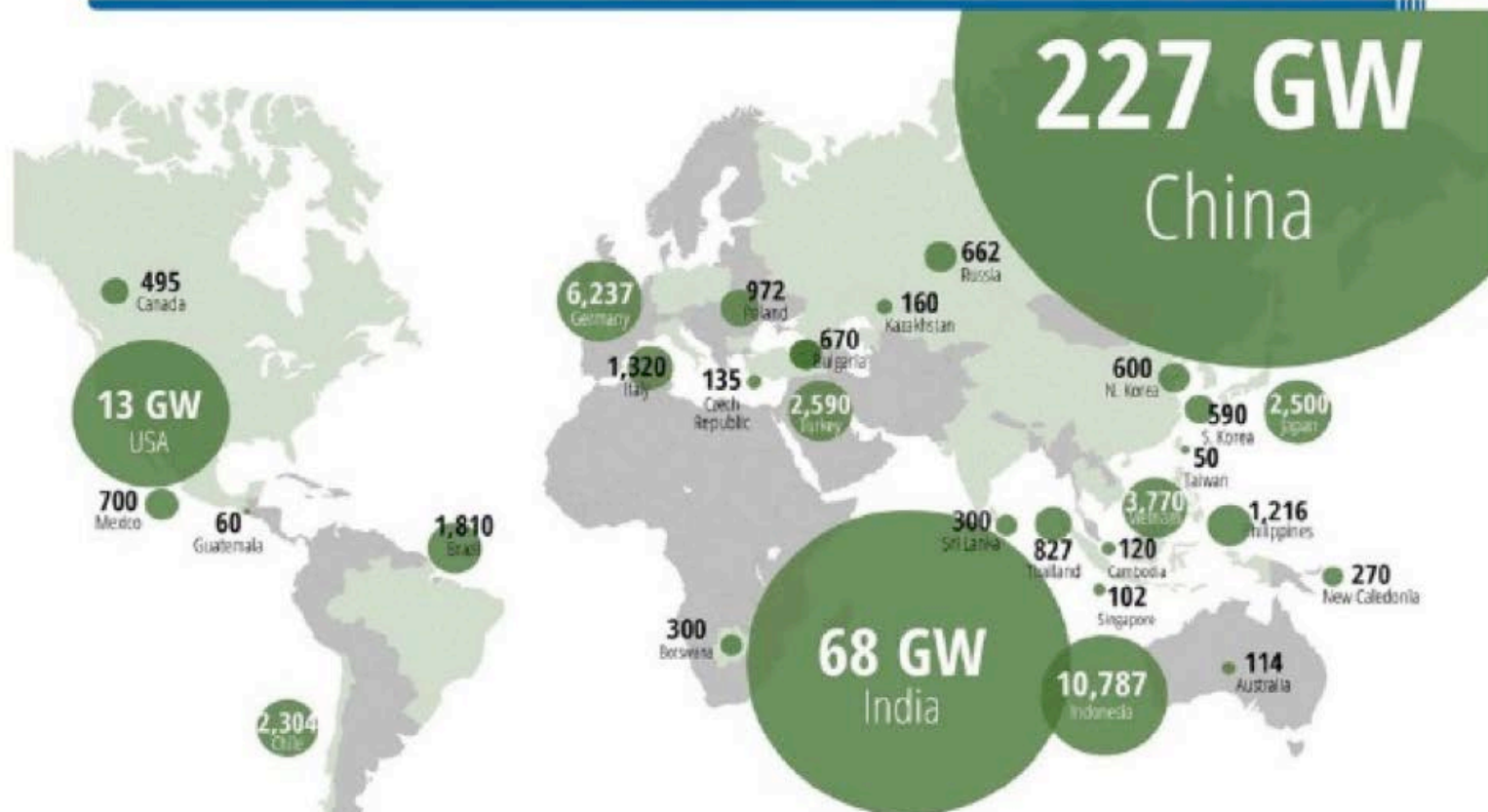
# Recent surge nearly double US coal capacity



# Countries with highest coal capacity (2014)

Rank	Country	MW
1	China	832,696
2	USA	322,491
3	India	164,953
4	Germany	54,388
5	Russia	48,656
6	Japan	41,750
7	South Africa	38,402
8	Poland	32,196
9	Australia	28,116
10	South Korea	26,944

# 30 Countries Add 348 GW and 800 New Coal Generation Units Since 2010



**~80 GW Per Year of New Coal Plants Now Under Construction**

Source: Platts World Electric Power Plant database. Plant Under Construction reference for 2015 and 2016. Capacity in megawatts, excluding China, India and U.S.

# Tracked global coal plant proposals since 2010





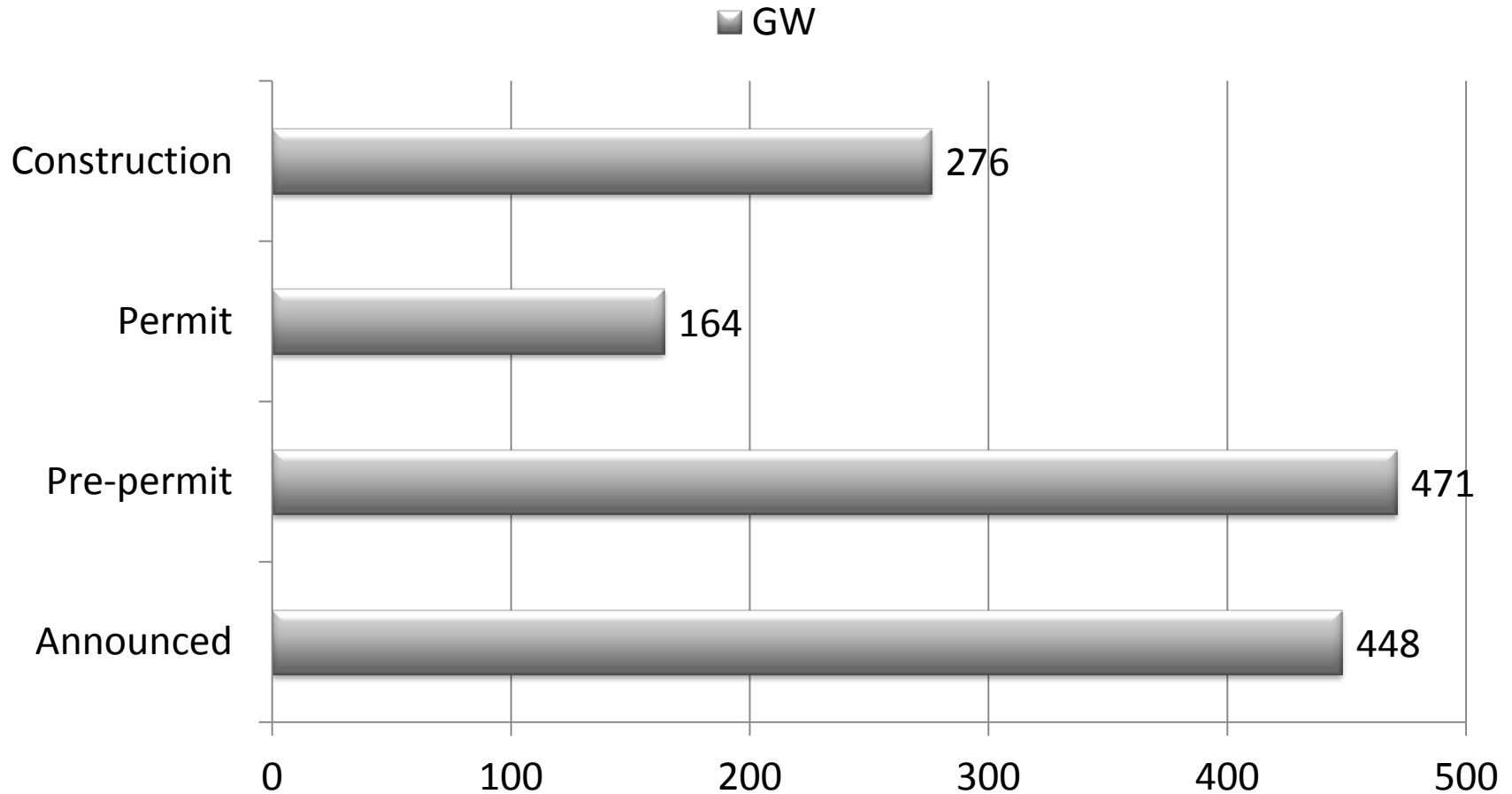
# Status Categories

- **Announced:** Proposed plants that have been announced but have not moved forward.
- **Pre-permit development:** Sponsors seeking environmental approvals, land, and water.
- **Permitted:** Proposal has all necessary environmental approvals.
- **Construction:** Site preparation and other development underway.

# Findings



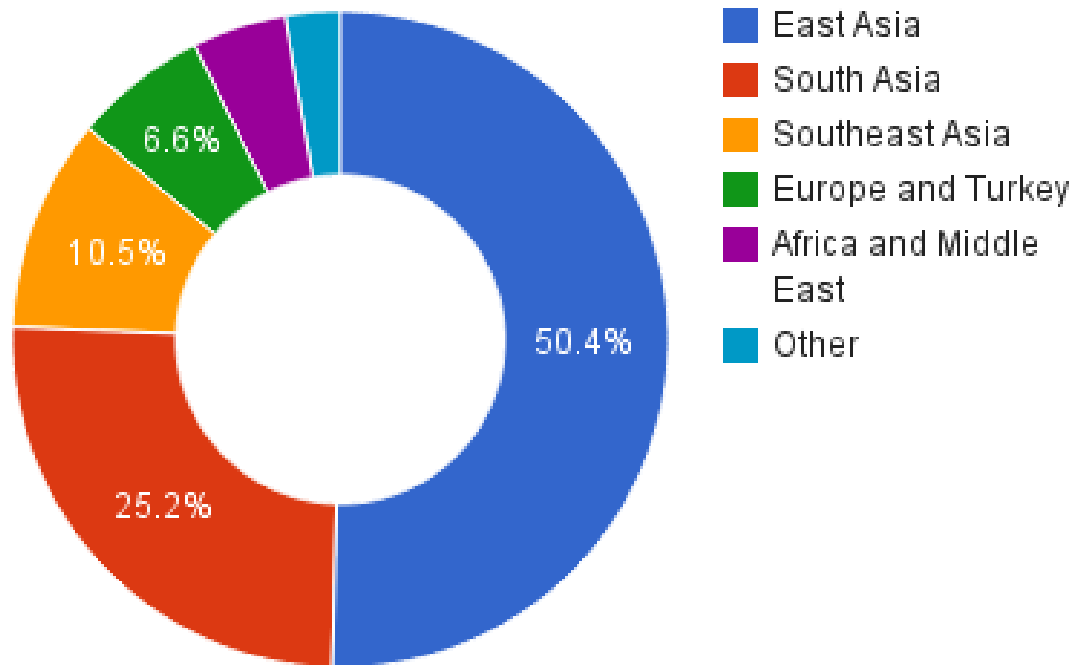
# Proposed Global Coal Capacity (2014)



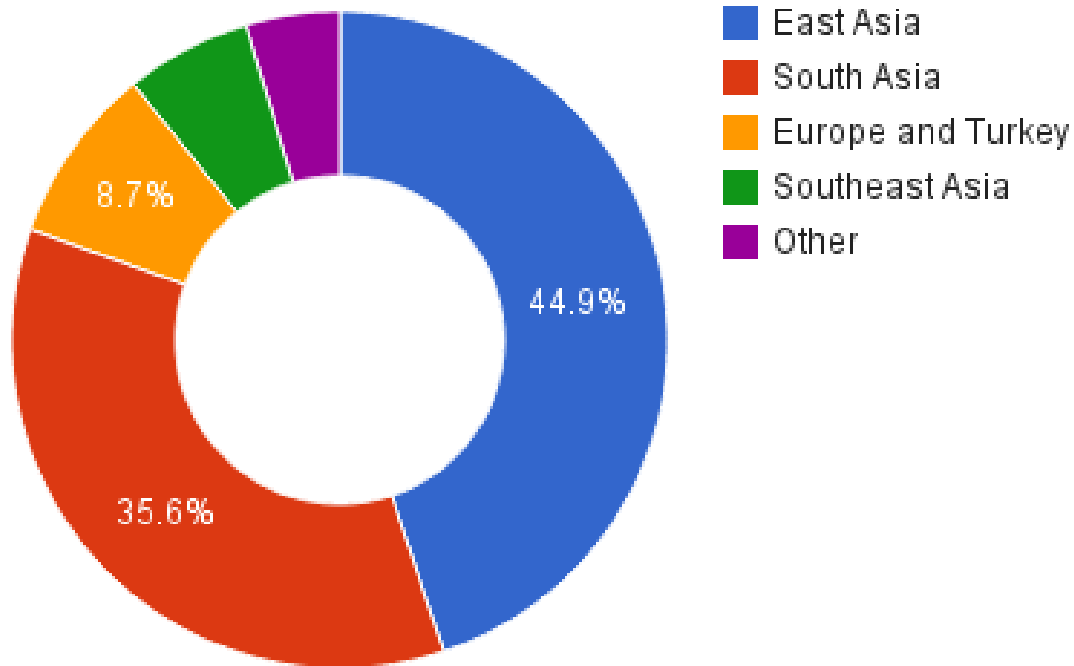
# Top Regions for Proposals (MW)

<b>Region</b>	<b>Announced</b>	<b>Pre-permit development</b>	<b>Permitted</b>	<b>Construction</b>
<b>East Asia</b>	226,432	235,209	49,860	138,917
<b>South Asia</b>	94,337	149,991	75,973	69,471
<b>Southeast Asia</b>	55,525	20,850	18,555	28,934
<b>Europe/Turkey</b>	36,217	49,650	5,807	18,102
<b>Africa and Middle East</b>	20,425	6,042	11,118	12,764

# Regional distribution of projects under construction



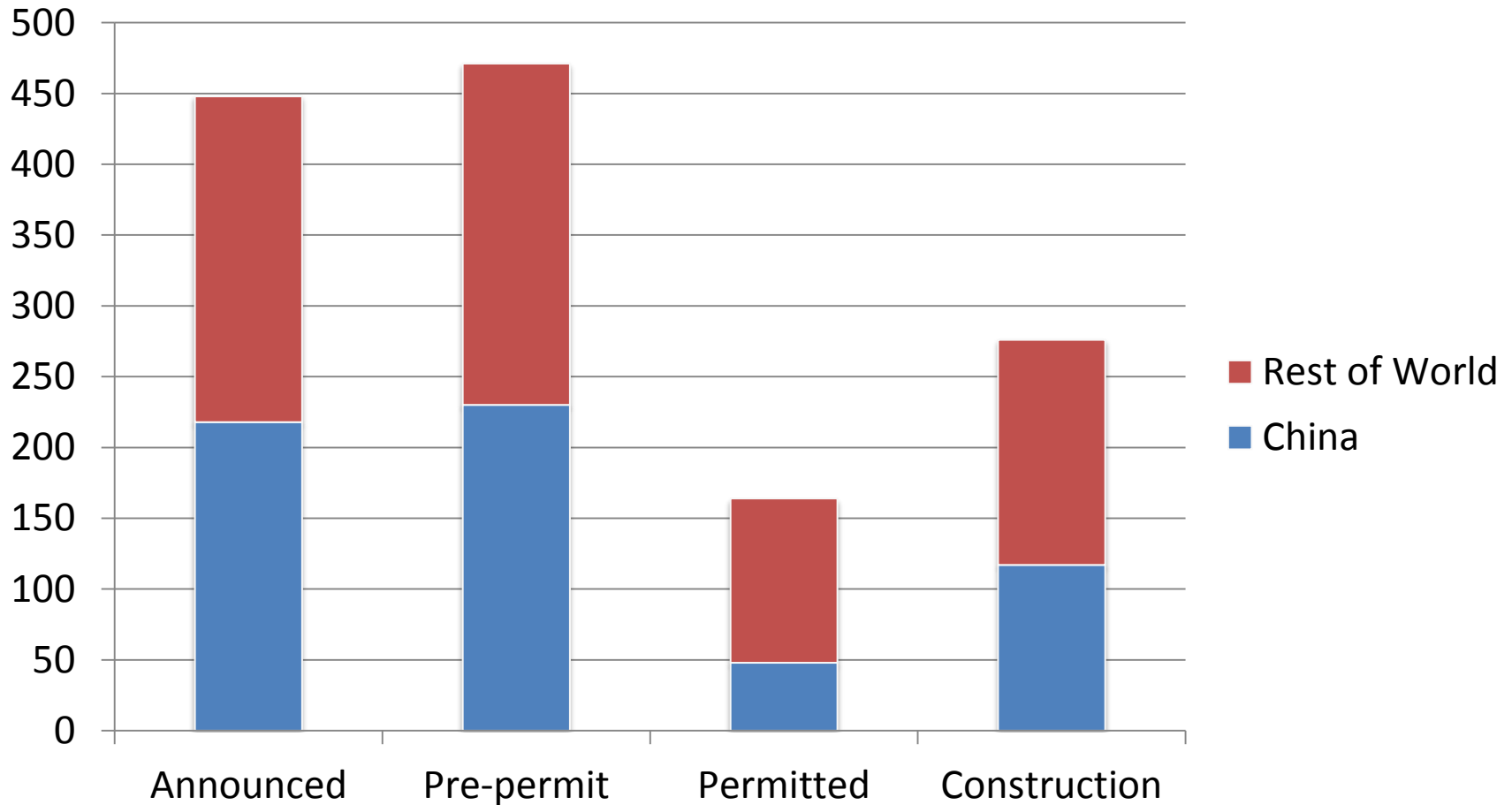
# Regional distribution of projects under development



# Outcome of proposals, 2010-2014

<b>Region</b>	<b>Halted</b>	<b>Completed</b>	<b>Ratio of Halted to Completed</b>
East Asia	194,625	227,650	1:1
South Asia	313,420	80,340	4:1
Europe	96,600	14,599	7:1
North America	23,653	14,677	2:1
Southeast Asia	22,260	13,701	2:1
Latin America	17,890	4,016	4:1
World total	709,952	356,866	2:1

# China's Share of Proposals (GW, 2014)

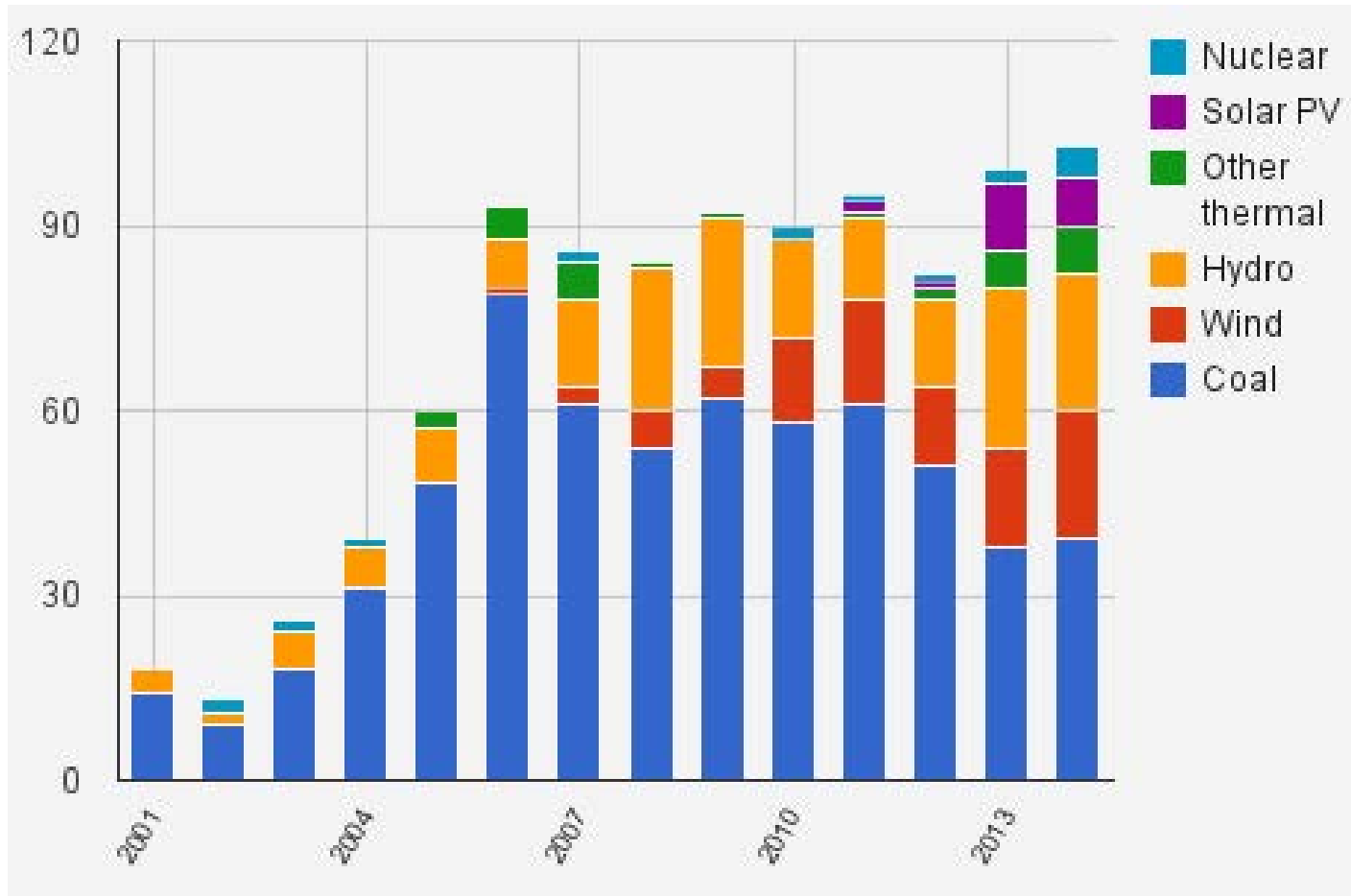




# Proposed coal plants shifting to Western China

<b>Region</b>	<b>Newly Operating (2010-2014)</b>	<b>Current Developmental Pipeline</b>	<b>Change</b>
<b>East Coast</b>	74,020	46,860	<b>-37%</b>
<b>Central</b>	53,290	86,380	<b>62%</b>
<b>Northeast</b>	17,500	7,070	<b>-60%</b>
<b>Western</b>	80,390	137,710	<b>71%</b>

# China Net Capacity Energy Additions (GW)

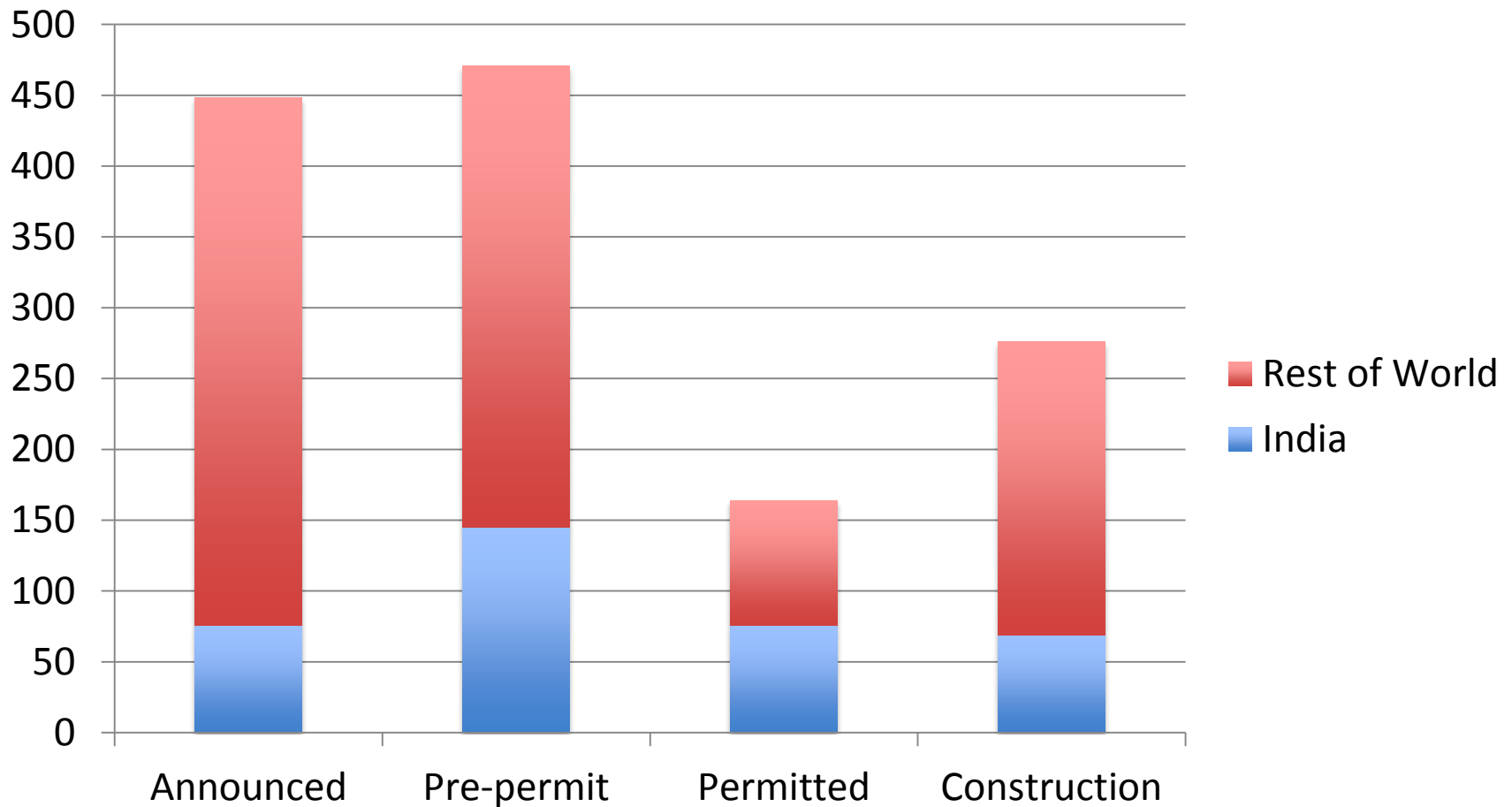


Source: Platts, China National Energy Administration

# China facing a capacity glut

- China coal use **fell in 2014**
- Coal plant **capacity utilization** at **54%**  
(WEO 2014)
- Growth of **alternative energies**
- New **air pollution** rules and **climate agreements**

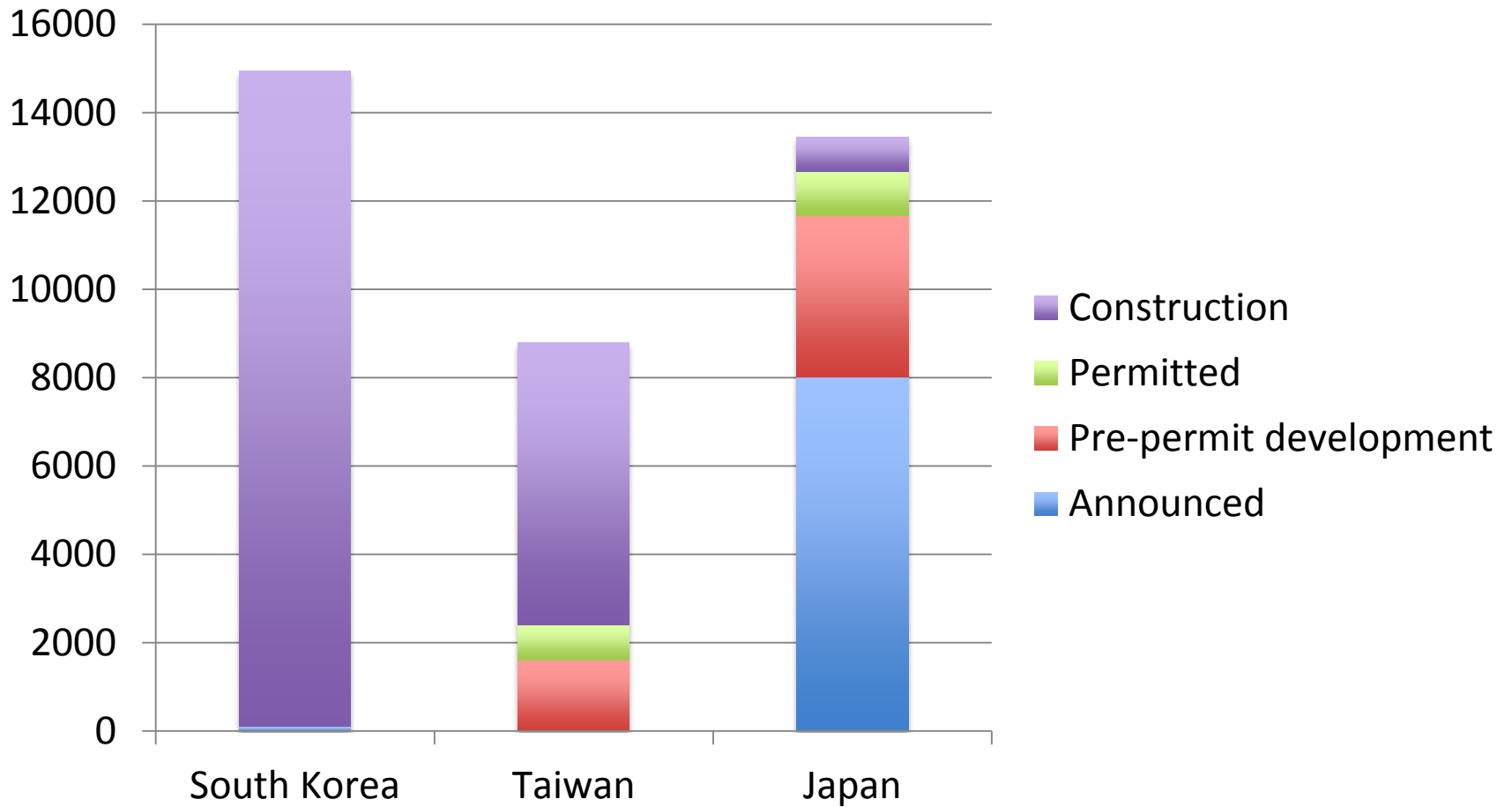
# India's Share of Proposals (GW, 2014)



# India's coal boom has withered

- For every coal plant completed from 2012-2014, **six plants** were abandoned
- Construction dropped from **101 GW in 2012 to 69 GW in 2014 (31%)**
- Since 2012, **less than 10 GW** has entered construction
- Slowdown due to **citizen opposition, coal supply shortages, and political corruption**

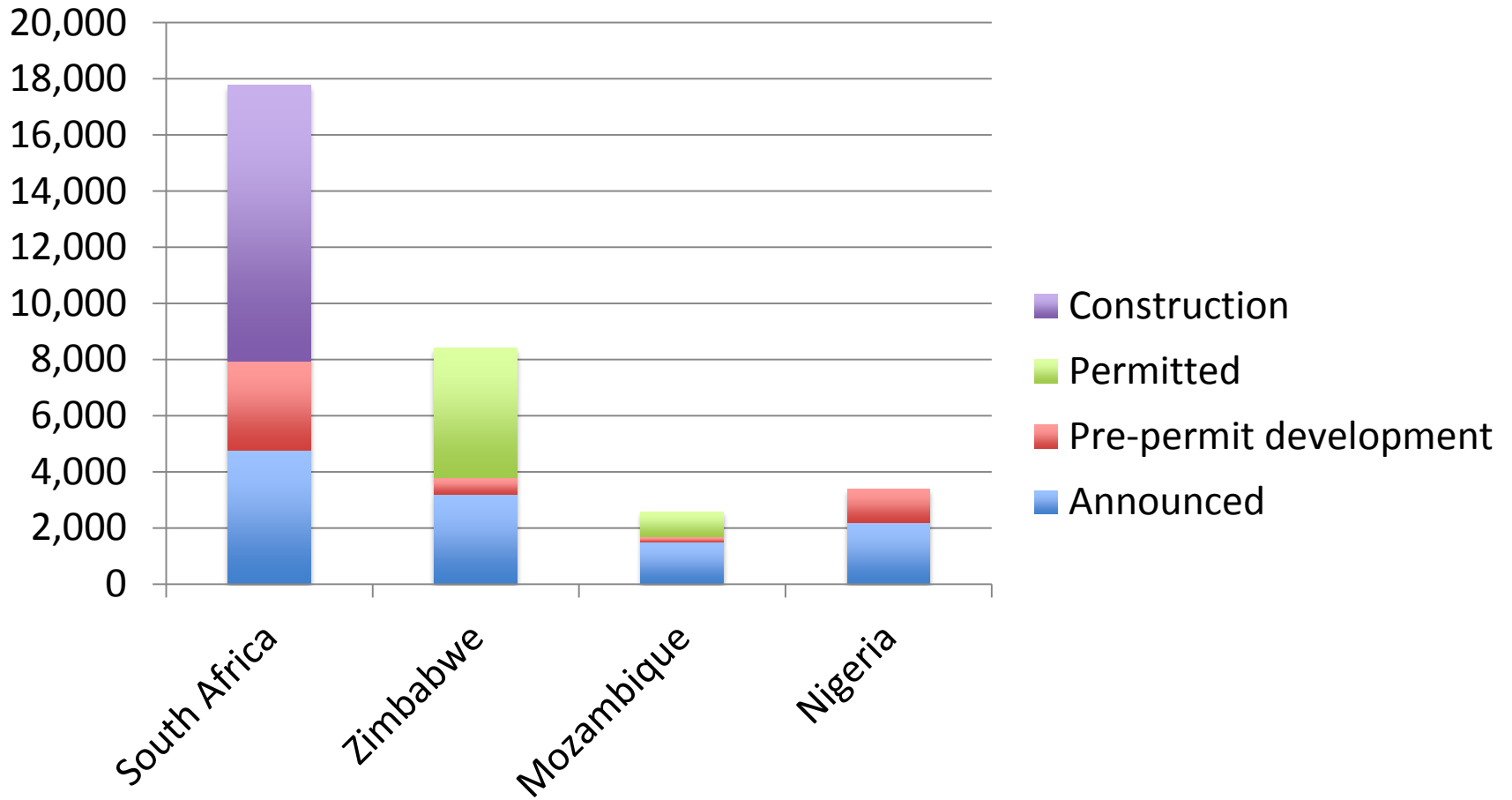
# East Asia (MW)



# East Asia

- Japan, S Korea, and Taiwan rank **4<sup>th</sup>**, **7<sup>th</sup>**, and **9<sup>th</sup>** in coal consumption, mostly imported
- South Korea (\$4 billion) and Japan (\$3 billion) **lead in export credits** into coal plants (OECD data, 2003-2013)
- Japan increasing **financial support of ultra-supercritical** combustion in developing nations

# Africa (MW)

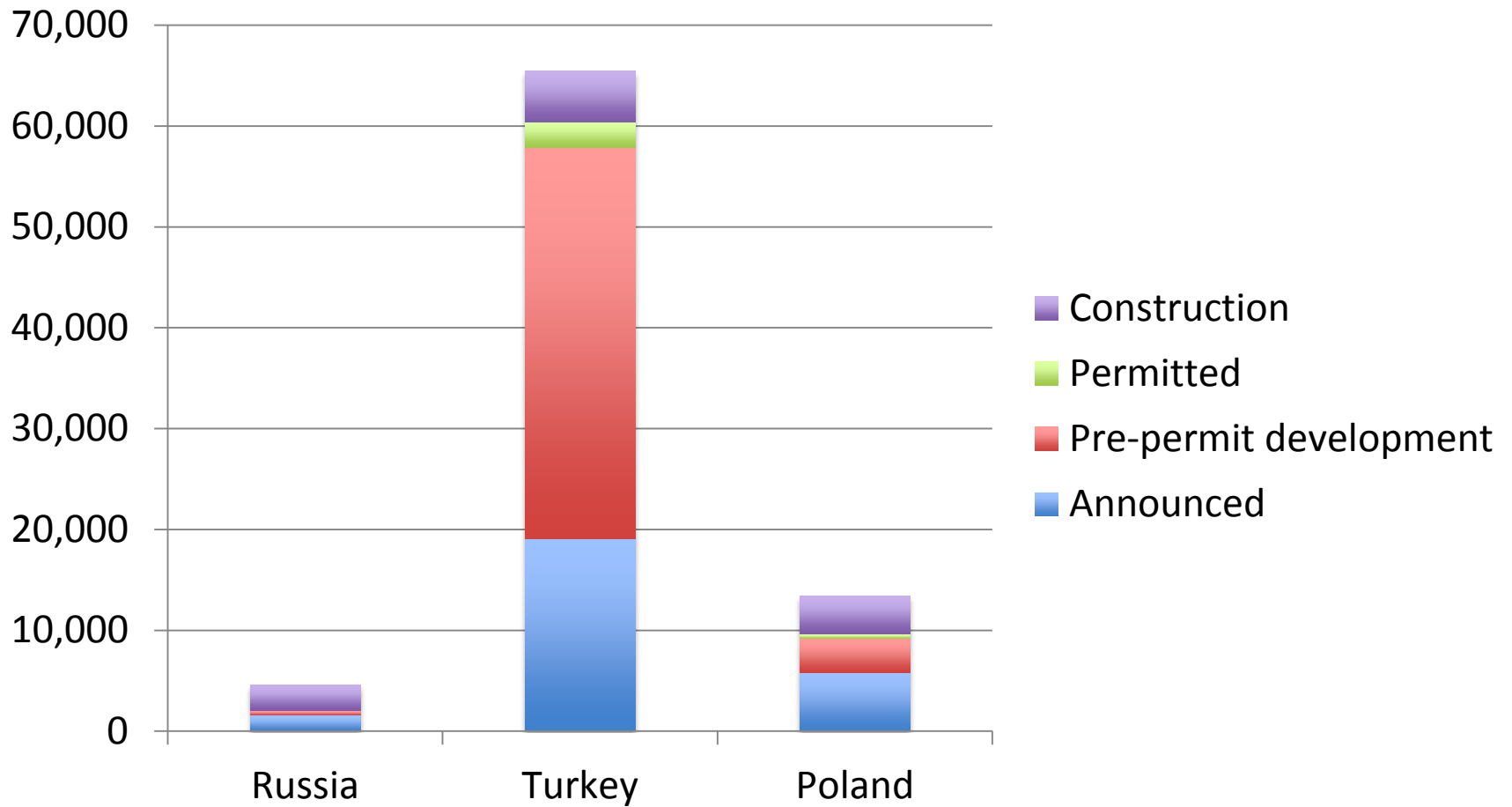




# Africa

- South Africa: **Medupi** and **Kusile under construction**, each 4,800 MW – among the largest coal plants in the world
- **China** heavily investing in proposed coal plants and mines in **Zimbabwe and Nigeria**
- **India and Japan** investing in coal projects in **Mozambique**

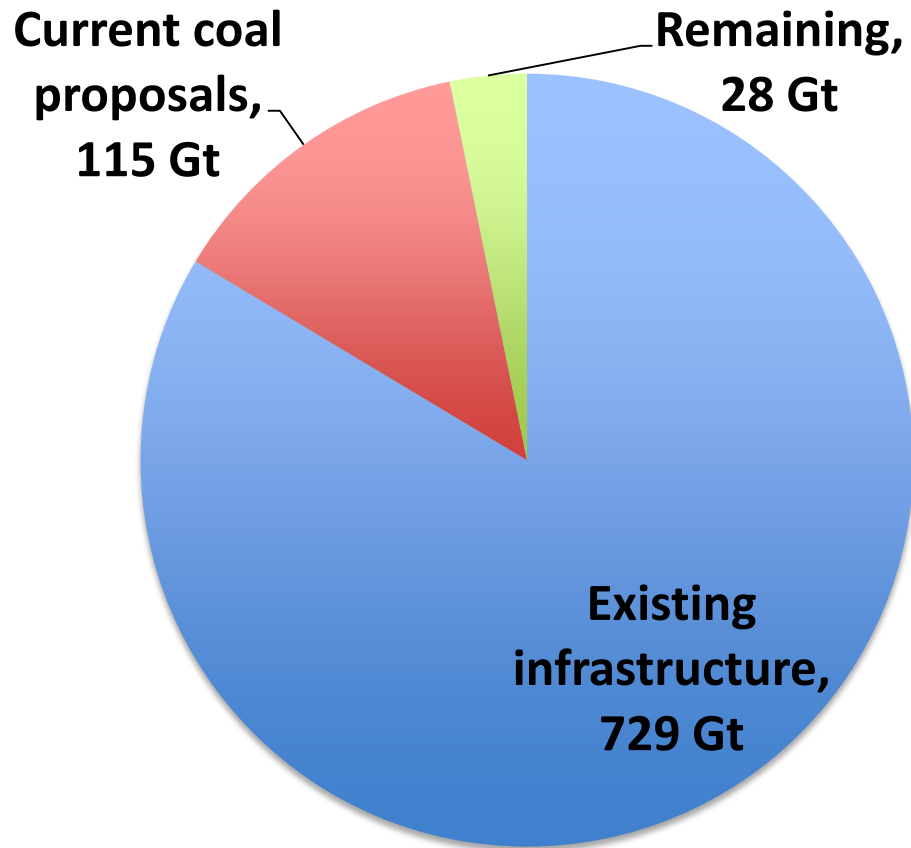
# Eastern Europe (MW)



# Eastern Europe

- Turkey **3<sup>rd</sup> highest** nation in proposals – many projects would be fueled by **indigenous lignite**
- Polish leadership has **opposed** EU carbon limits and **increased domestic coal** mining
- Russia **expanding existing coal** power stations and **coal exports**

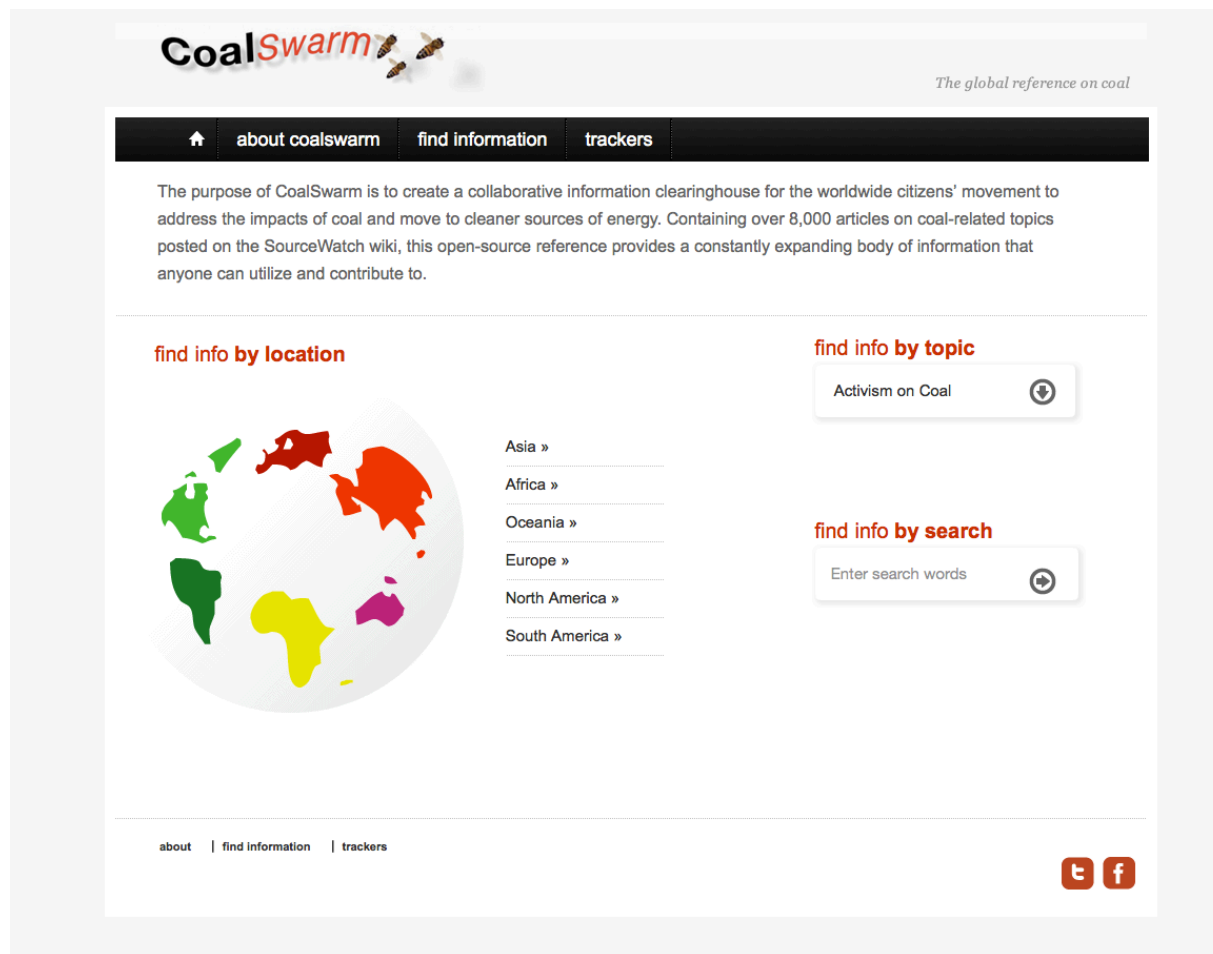
# 2°C Carbon Budget (Gt): 870-1,240 Gt CO<sub>2</sub> by 2050




# Summing Up

- **1,080 GW** of proposed new coal capacity, but much of it won't be built
- **Coal plant growth slowing** in India and China
- East Asia **hyping “ultra-supercritical”** technologies
- Many new proposals in **areas with high coal reserves**: Turkey, Poland, Zimbabwe
- Even at recent 1 in 3 completion rate, current proposals would **push us to 2°C warming**

# Thanks! More info at coalswarm.org



The screenshot shows the CoalSwarm website homepage. At the top left is the logo "CoalSwarm" with a small insect icon. To the right of the logo is the tagline "The global reference on coal". Below the logo is a navigation bar with four items: a home icon, "about coalswarm", "find information", and "trackers". The main content area starts with a paragraph explaining the purpose of CoalSwarm: "The purpose of CoalSwarm is to create a collaborative information clearinghouse for the worldwide citizens' movement to address the impacts of coal and move to cleaner sources of energy. Containing over 8,000 articles on coal-related topics posted on the SourceWatch wiki, this open-source reference provides a constantly expanding body of information that anyone can utilize and contribute to." Below this paragraph are two columns of navigation options. The left column is titled "find info by location" and features a circular world map with colored continents. To the right of the map is a list of regions with arrows: "Asia »", "Africa »", "Oceania »", "Europe »", "North America »", and "South America »". The right column is titled "find info by topic" and has a button labeled "Activism on Coal" with a plus icon. Below that is a section titled "find info by search" with a text input field labeled "Enter search words" and a search icon. At the bottom of the page, there is a footer with the text "about | find information | trackers" and social media icons for Twitter and Facebook.


**CoalSwarm** 

*The global reference on coal*

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The purpose of CoalSwarm is to create a collaborative information clearinghouse for the worldwide citizens' movement to address the impacts of coal and move to cleaner sources of energy. Containing over 8,000 articles on coal-related topics posted on the SourceWatch wiki, this open-source reference provides a constantly expanding body of information that anyone can utilize and contribute to.

**find info by location**




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