

Shale Gas Development: Myths and Truths

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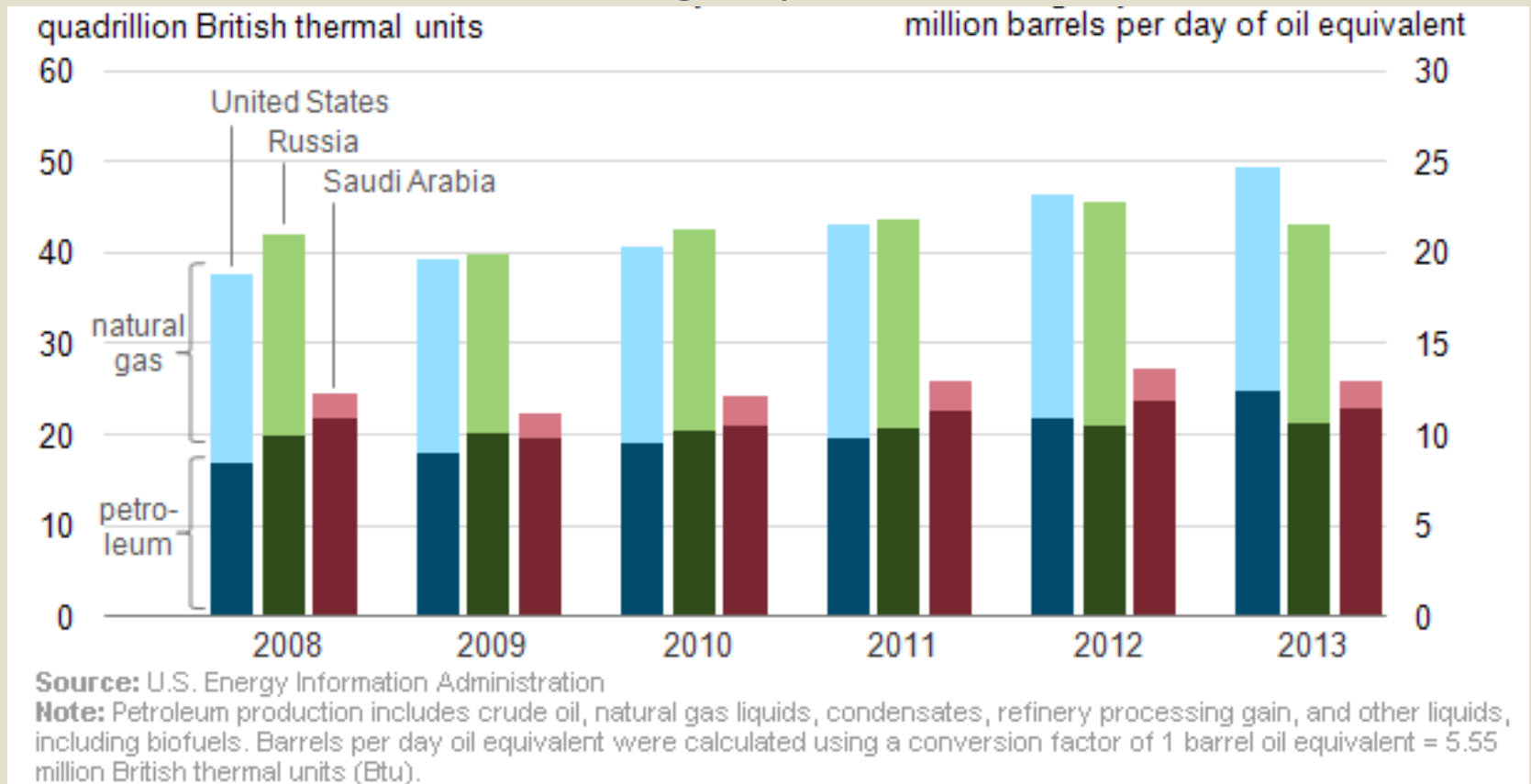
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MYTH: Saudi Arabia and Russia are the leading producers of oil and gas in the world.

TRUTH: The USA has become the number 1 global producer of both gas and oil.

The Oil & Gas “Revolution”

Estimated U.S., Russia, and Saudi Arabia petroleum and natural gas production



MYTH: Shale gas development in North America is unregulated.

TRUTH: North American regulatory systems are complex, variable, and evolving.

--some states (New York) and provinces (Quebec) prohibit shale gas development.

--some states and provinces adapt existing regulatory systems to shale gas (e.g., Alberta and Texas).

--some states and provinces develop new regulatory systems for shale gas development (e.g., reforms in Pennsylvania and Illinois).

MYTH: Public opinion in North America is highly supportive of shale gas development.

TRUTH: Public awareness in the USA is low and opinion is labile.

--The majority is not familiar: 40-60% never heard of it (“fracking” or hydraulic stimulation).

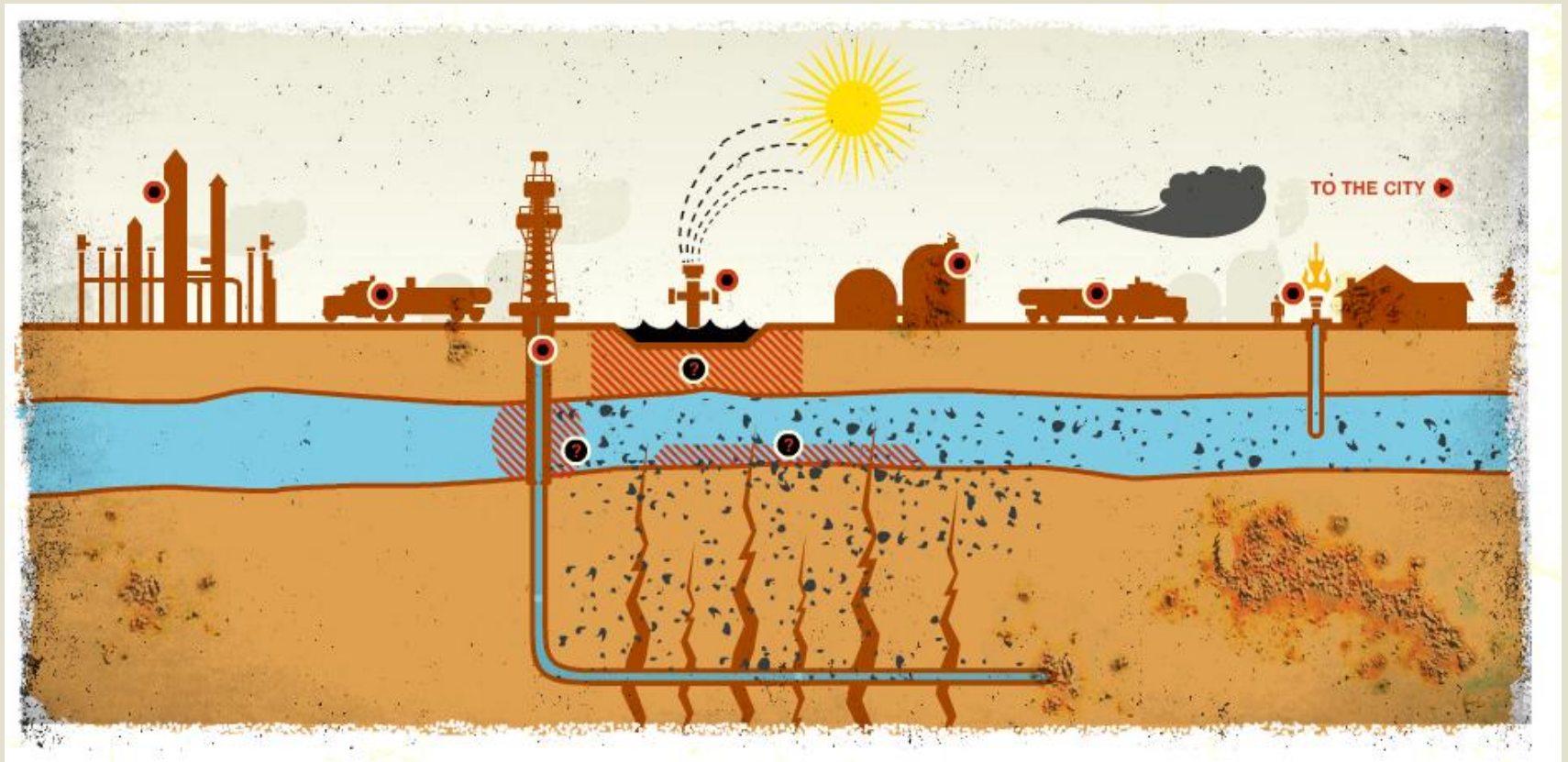
--Low levels of knowledge about shale gas development.

--Plurality (40-50%) or modest majority (50-65%) favor it, but opposition is growing in some states.

--Community re-investment funds may enhance public support (e.g. Impact Fee in PA).

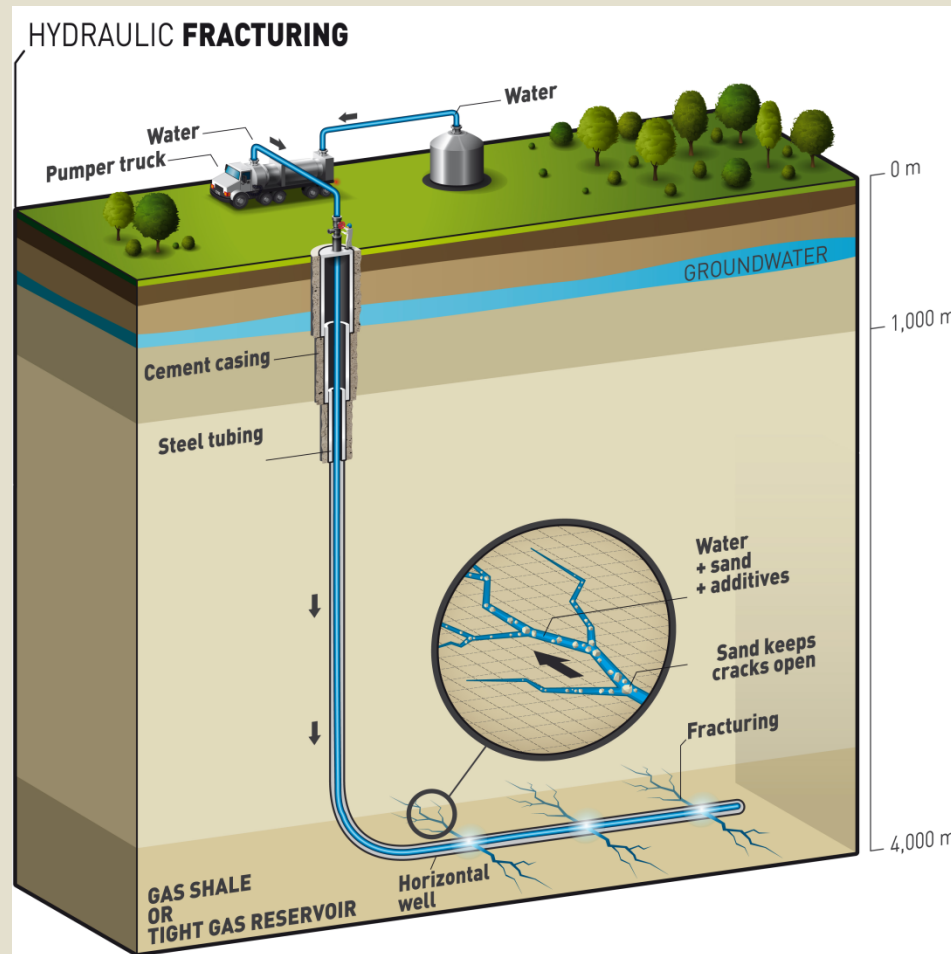
MYTH: The biggest risk from fracking (hydraulic stimulation) is groundwater pollution.

Anti-Fracking Visual



Source: Gasland retrieved from http://ingenious.com/?page_id=10184

Pro-Fracking Visual



Source: Total E&P Denmark B.V. retrieved from <http://en.skifergas.dk/technical-guide/what-is-hydraulic-fracturing.aspx>

TRUTH: The risk of fracking to groundwater can be managed.

- Cement casings are designed to prevent leaks during stimulation.**
- Fracking operations occur thousands of feet below the water table, where wastes are trapped.**
- Underground fracking wastes are rarely measured more than a few hundred feet from the location of fracking.**
- Best waste solution: combination of recycling and deep well injection of residual wastes.**

MYTH: Local communities have no opportunity to participate in shale gas development.

TRUTH: The influence of local communities is substantial and growing.

--local community leaders and residents have opportunities to register their opinion prior to project initiation and throughout projects.

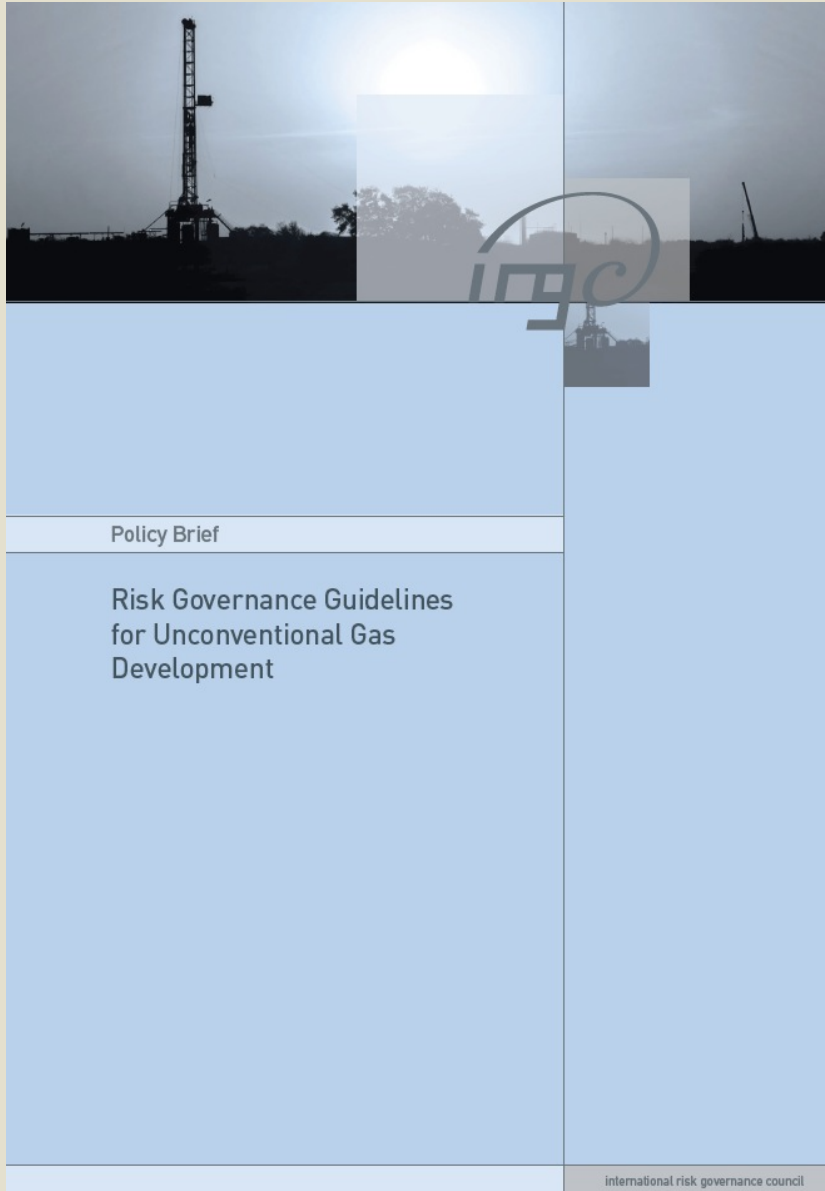
--some local and regional governments are using zoning authority to restrict shale gas development.

--many local governments request (and receive) substantial benefits from shale gas projects.

--developers who ignore local community sentiments are headed for trouble.

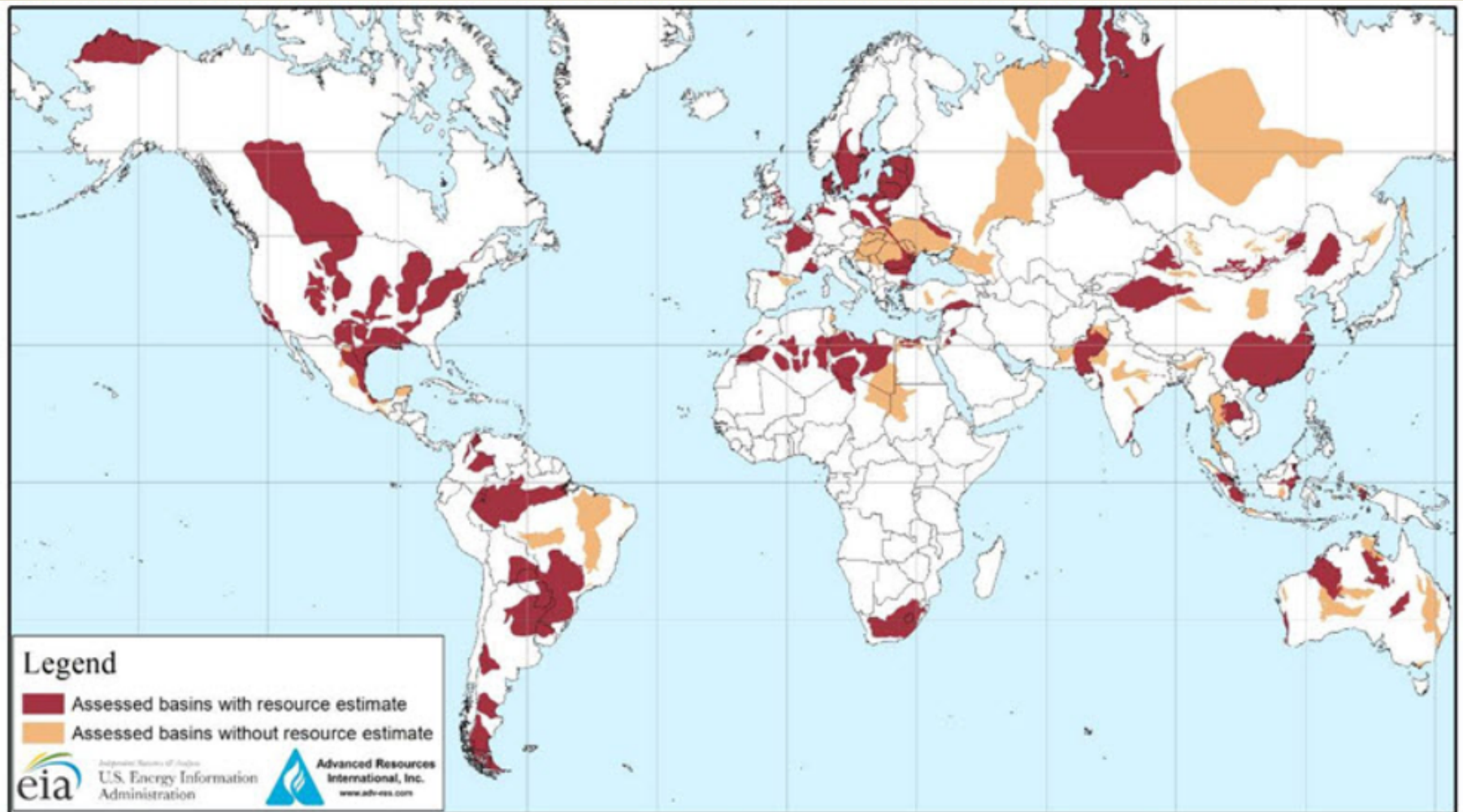
Guidance for countries considering shale gas development.

Recent IRGC report provides risk-governance guidelines based on real-world experience in North America.



Shale Gas: Global Opportunities

Map of basins with assessed shale oil and shale gas formations, as of May 2013



Source: United States basins from U.S. Energy Information Administration and United States Geological Survey; other basins from ARI based on data from various published studies

Thank You!