

# Leveraging Policy Mechanisms to Improve Success of CMM Capture and Utilization in Kazakhstan

**Meredydd Evans\***  
**Pacific Northwest National  
Laboratory**  
**(\*presenter)**

**Volha Roshchanka**  
**University of Maryland**

---

*September 25, 2015*

**Astana, Kazakhstan**

# Contents

---

- Introduction: Policy and Coal Mine Methane (CMM)
- Enabling conditions for stimulating CMM
- Policies supporting CMM capture and utilization
- Summary of opportunities for Kazakhstan

# Introduction: Policy and Coal Mine Methane (CMM)

---

- Policy defines the playing field, creating the tipping point for CMM project feasibility
- In several countries (Australia, Germany, Poland, UK, China), introduction of policies supporting CMM led to more implemented projects
- **Kazakhstan: top-ten coal producer and methane emitter from coal mines**
  - Kazakhstan has experience in CMM capture and utilization, and stronger policy support could scale up projects



# Enabling Conditions and Policies

- Less supportive conditions require more policy support for CMM projects to make them feasible

MORE POLICY SUPPORT NEEDED

CMM-specific policies

Subsidies  
Feed-in tariffs and obligations  
Tax incentives  
Strong institutional support  
Environmental taxes



VS.



China has experienced challenges in implementing safety requirements. Government decided to encourage CMM projects as a way to improve mine safety. **Carrots tend to work better than sticks!**



Strict safety requirements and implementation ✓  
Access to energy markets ✓  
Cost-reflective prices for natural gas and electricity ✓  
Clearly defined property rights ✓  
Composition of gas flows ✓  
Mine gassiness ✓

# Creating Favorable Policies & Incentives for CMM Projects

---

- Adjustments to the legal framework usually improve conditions for CMM projects:
  - Institutional framework
  - Defined property rights
  - Access to gas and power markets
- Gov't can adopt CMM-specific policies:
  - Feed-in tariffs and obligations
  - Tax incentives
  - Environmental taxes and regulation
  - Safety requirements and adequate technical regulations

# Institutional Framework for CMM



- A central/regional body with authority to bring stakeholders together + clearly defined responsibilities:
  - **China and India:** CMM/CBM Clearinghouses (funded by USEPA)
  - **Australia:** national programs (GGAP and CMATSP) provide grants and support research on deploying newer technologies to reduce GHG emissions
  - **Russia:** Coal & Methane Research Center in Kemerovo
- **Kazakhstan:** Department of Coal Industry Development (Ministry of Energy) has been taking a leadership role
- **Opportunity for progress:** increase visibility (online presence) and build capacity to offer resources, promote dialogue and identify issues and solutions, also regional centers

# Gas Ownership/Lease Rights

- Clear rights to owning (leasing) CMM reduce uncertainty, conflicts, risks and costs
  - **Australia:** CMM is owned by states; in New South Wales, coal lessee may apply for inclusion of petroleum or gas. If CMM rights are refused, the gov't auctions them off
  - **Germany:** CMM ownership rights are automatically transferred to a coal mining company for the duration of the coal mine lease, provided there are plans for a CMM project
- **Kazakhstan: working to clarify ownership**
- **Clear rights and procedures for transfer are key to multi-party projects**

Few investment  
options



Transferability  
of rights



# Ownership (Leasing) of Mineral Rights

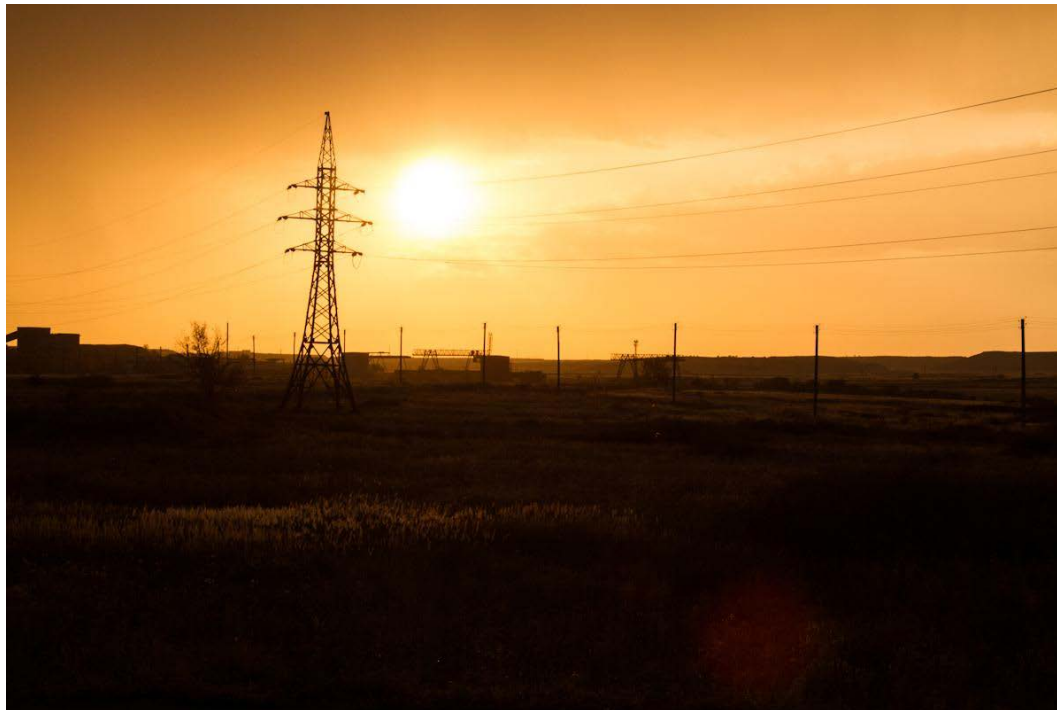
---

- Aspects of leasing (i.e., temporary transfer of ownership) that might affect CMM:
  - Leasing by subsoil space, geologic formation or by resource type
  - Bundling of resource development stages under one lease: exploration, appraisal and production
  - Transferability of rights (subleasing)



# Access to Gas and Power Markets

- Kazakhstan's law, in principle, assures easy access to natural gas and power markets
  - Mines are not in proximity to natural gas infrastructure



# Feed-in Tariffs and Obligations

- Feed-in tariffs and obligations can help boost investment while market for CMM develops
  - *The U.S.:* state-level requirements for retail electricity providers to provide % of their electricity supply from “alternative” energy
  - *Germany:* since 2000, CMM is included in the Renewable Law and guaranteed a price of up to €0.07/kWh
  - *Poland:* since 2011, utility obligation to purchase up to 2.3% of electricity from highly efficient cogeneration, like CMM (Purple Certificates)
  - *China:* feed-in tariff of 0.25 yuan/kWh (\$0.04/kWh); however, implementation has not been universal
- **Kazakhstan: feed-in tariffs and obligations for other forms of alternative energy**
- **Opportunity for progress: inclusion of CMM-based energy would boost utilization**

# Tax Incentives

---

- Tax incentives: reduced/removed royalties and/or taxes on production, income, capital purchase
  - *The U.S.:* before 2002, income tax credit- \$1 per 1.06 GJ of CMM
  - In *China*, several tax rebates to encourage CMM:
    - Royalties for exploration rights and mining rights: exempted for the first year, 50% deducted for the 2nd and 3rd year, 25% deducted for the 4th to 7th year
    - No VAT on CMM/CBM sale; no income tax
- **Kazakhstan: currently, no tax incentives**
- **Opportunity for progress: provide tax incentives with clear implementation mechanism**

# Environmental Policies

- Environmental taxation and emission quotas:
  - **UK:** CMM power is exempt from Climate Change Levy. Under 2002 Finance Act, CMM is defined as exempt renewable because of environmental and employment benefits
  - **Russia:** charges for methane emissions recently increased. Base charges: 50 RUB/t, 250 RUB/t within temporary limits, and 1,250 RUB/t -- above temporary limits
- **Kazakhstan:** recently adopted cap-and-trade; CMM utilization can be GHG offsetting measure
- **Opportunity for progress:** coordination of the two policies and accounting methodologies

# Safety Requirements and Adequate Technical Regulation

- Strong implementation of safety requirements boosts CMM:
  - *Australia's* CMM development – driven by safety concerns
  - *Russia* recently adopted a law specifying that a mine has to be degasified, if it has over 13 m<sup>3</sup>/t of methane
  - In *China*, incentivizing CMM is seen as a way to improve mine safety due to poor implementation of safety rules
- **Kazakhstan: detailed safety and degasification procedures; oversight of the system; reform goals**
- **Opportunity for progress: greater engagement of stakeholders; regulations need to catch up with best practices; focus on the ease of implementation, principles of safety and assessment of risks**

# Conclusions and Implications for Kazakhstan

---

- Opportunities for further progress in Kazakhstan:
  - ✓ Build capacity of bodies with central/regional CMM responsibilities
  - ✓ Clarify rights for ownership (leasing) and procedures for transfer
  - ✓ Include CMM in the list of alternative fuels that are eligible for existing feed-in tariffs and obligations
  - ✓ Provide tax incentives
  - ✓ Coordinate environmental policies methodologies on methane emissions
  - ✓ Engage stakeholders in safety regulation, bring safety regulations in line with practices

# GMI's Experience in Supporting Countries' CMM Framework

---

- GMI has:
  - Helped create and fund the clearinghouses and programs in China, India and Russia
  - Informed policy activities in Ukraine, Mongolia, China and Colombia
  - Funded and coordinated pre-feasibility and feasibility studies in China, Kazakhstan, Mongolia, Russia
  - Has technical expertise in developing effective policies and programs.

**Thank you!**



# References

---

- GMI. 2010. “Coal Mine Methane Country Profiles.” Available at [https://www.globalmethane.org/tools-resources/coal\\_overview.aspx](https://www.globalmethane.org/tools-resources/coal_overview.aspx).
- GMI (Global Methane Initiative). 2014. “Legal and Regulatory Status of CMM Ownership in Key Countries: An Overview Provided for Decision Makers in Mongolia.” <http://www.epa.gov/cmop/docs/Mongolia-CMM-Ownership-Policy-White-Paper-July2014.pdf>.
- Roshchanka, V. and M. Evans. 2015. “Coal Mine Methane Policy in Kazakhstan. Existing CMM Policies in Kazakhstan.”