‘When unconventional becomes conventional’: The anticipatory politics of shale oil development

Kärg Kama
DPhil Candidate

Supervised by Prof. Andrew Barry

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Oil shale extraction in recovery?

Source: the calculations of John Dyni updated by Alan Burnham and presented by Jeremy Boak at the 31st Oil Shale Symposium, 17 October 2011.
Oil shale industries as ‘techno-economic networks’*

‘Highly heterogeneous, yet coordinated’ sets of actors

- Resource deposits
- Site-specific technologies and knowledge of extraction
- National regimes of ‘economic’ and political acceptability

Questions

- What does it mean to be (un)conventional with regard to socio-economic change and technological innovation?

- How is it possible to transfer the technological systems that are deemed ‘conventional’ and ‘economic’ in one place to different geographical settings?

- How could one account for the role of resource materiality in the politics of technology transfer and development?
Estonian oil shale industry

- 90% electricity, 60% net energy
- *Eesti Energia* (Enefit) monopoly
- 1/3 resource for shale oil
- Uncertainty:
  - EU market liberalisation
  - CO2 pricing & restrictions on other emissions
  - Resource decline
Estonian expansion

Enefit American Oil (100%)
124km² property and leased land in Vernal, Utah

China:
Enefit-Outotec technology sales

Jordan Oil Shale Energy (65%)
70km² concession agreement; plus power plant project

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K.Kama - "When unconventional becomes conventional"
Conventionalizing ‘the unconventional’

I Laboratory phase  
- Basic Research
- Applied research
- Bench Scale Plants

II Field testing  
- Pilot Plants
- Semi-works (Scale up)

III Commercial phase  
- Demo Plants
- Commercial Plants

• Hytort
• Kentort
• Oil Tech
• Syntec

• STB
• Exxon FB
• AC Roller
• Grate

• Dravo
• Superior
• Paraho
• Lurgi
• ATP
• Tosco II
• MIS/IS

• Unocal
• Petrosix
• Fushun
• Kiviter
• Galoter

Time

- 20-25 years
- 10-20 years
- 5-10 years
- 0 years

Innovation in Estonia

- Single oil plant (1981) based on the ‘Galoter’ technology
- Industrial science → Outotec GmpH in Frankfurt
- What counts as “working” technology?
- What counts as “oil”?
Economization in Estonia

- Shale oil survived under the auspices of power plants: state subsidies, low environmental taxes/fees, free CO2 quota

- Economies of scale?

- Universalization, standardization?
Contestation in Estonia

- *Enefit’s* expansion seen insensible and immoral
- Doubts in technology
- *Outotec* a threat to national science
- CEO: “We are not discussing, we are simply doing it”
Jordan

- Unconventional → indigeneous
- 3 Concession Agreements: Shell, Enefit, JEML (+ up to 8)
- Jordan Oil Shale Energy Co.
- Both oil and power
- Environmental concerns less pronounced
- Fiscal regime introduced
Utah

- Enefit American Oil (100%)
- 1 RD&D licence out of 6
- A paradigmatic shift?
- Local bottlenecks
- Environmental liabilities and opposition
Some conclusions

- Small companies (surface) vs. multinationals (in-situ)
- Questions of competition & intellectual property less important
- Role of state governments central
- Access to finance markets vs. the realities of production
- Materiality
Thanks!

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karg.kama@ouce.ox.ac.uk