



The Role of Natural Gas in Ukraine's Economy and Politics

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Russo-Ukrainian gas relations: 1991-2009

1991-2005:

- Barter deals: cheap gas in exchange for secure gas transit;
- Annual Intergovernmental agreements
- Non-payment problems & debt accumulation for imported gas from Russia
- Several gas disruptions as early as in 1993

2006 Gas Crisis:

- Gazprom's quest for introduction of "European price" in UA (and in other CIS countries);
- UA: increase in import price = increase in transit price for Gazprom;
- Results: 3 days of cut-off supplies to UA - - > UA off-took gas intended for EU;
- Commercial contracts for 5 years

2009 Gas Crisis:

- Conflict over price for 2009; UA's debt to Gazprom;
- Results: initial cut-off for UA, again UA off-took EU gas → ~3 weeks of total cut-off for UA and EU;
- 2 long-term contracts (until 2019) regulating transit through and supplies to UA ("European" price formula for transit and supplies)

Russo-Ukrainian gas relations: 2010 – 2013

2010 “Kharkiv Gas Accords”:

- RF Naval Fleet in Crimea until 2042 in exchange for a 30% (or 100\$/tcm if price > 333\$/tcm) discount on gas price until 2019

2013 December gas deal:

- A further 33% discount on gas price until 2019

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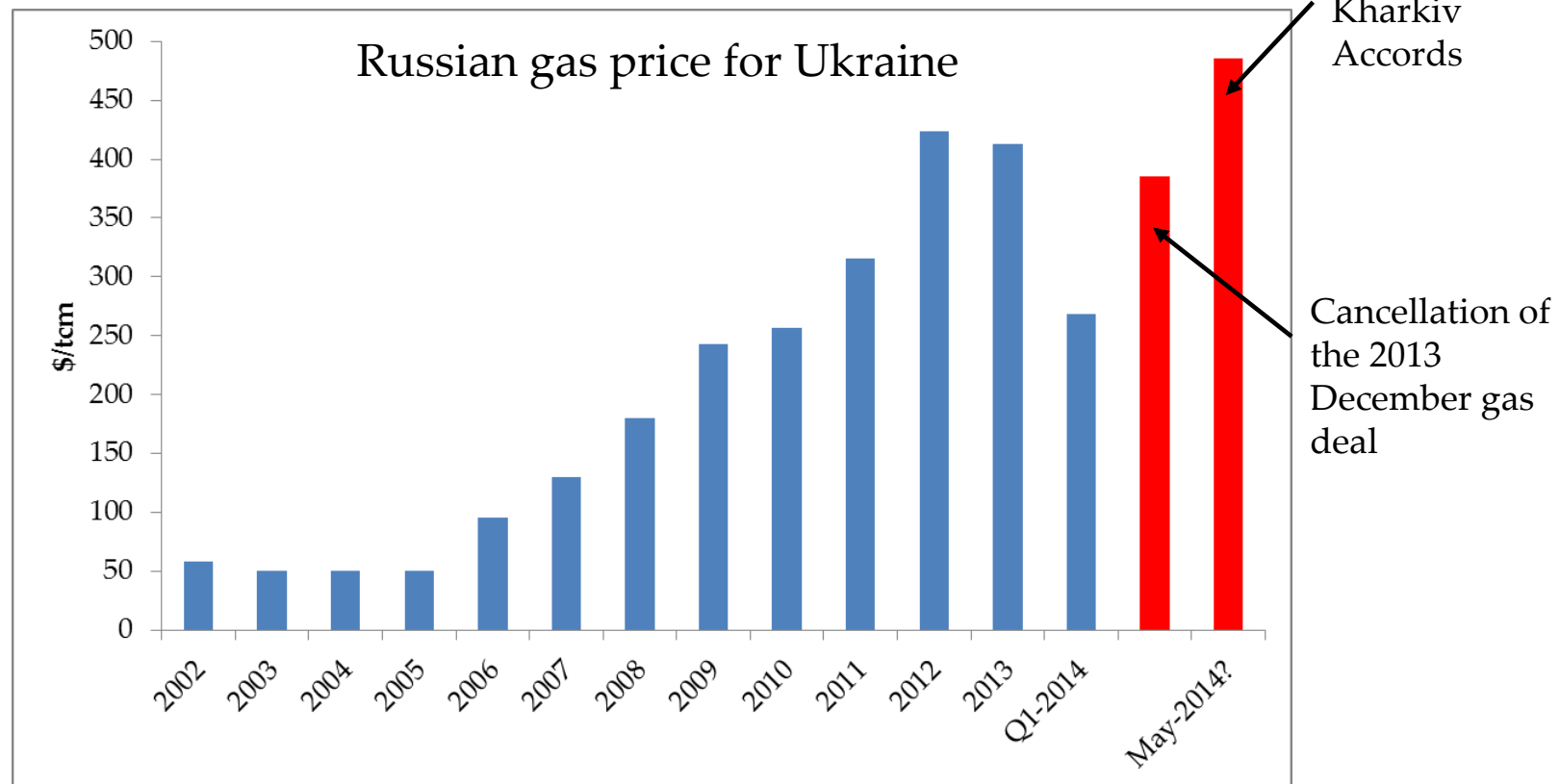
Russo-Ukrainian gas relations: Q1-2014

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**Yatsenyuk: Ukraine not accepting
Russian gas price of \$485 per 1,000
cubic meters**

Fears of gas war as Ukraine refuses to pay increased prices set by Russian firm

The Telegraph

Ed Davey: Russia must not be allowed to use energy as a weapon

Energy secretary says Russia has added to Ukraine's bill for gas supplies "completely outrageously", as G7 energy ministers meet to discuss reducing dependence on Russian gas

Ukraine's strategic weapon – gas transit pipelines

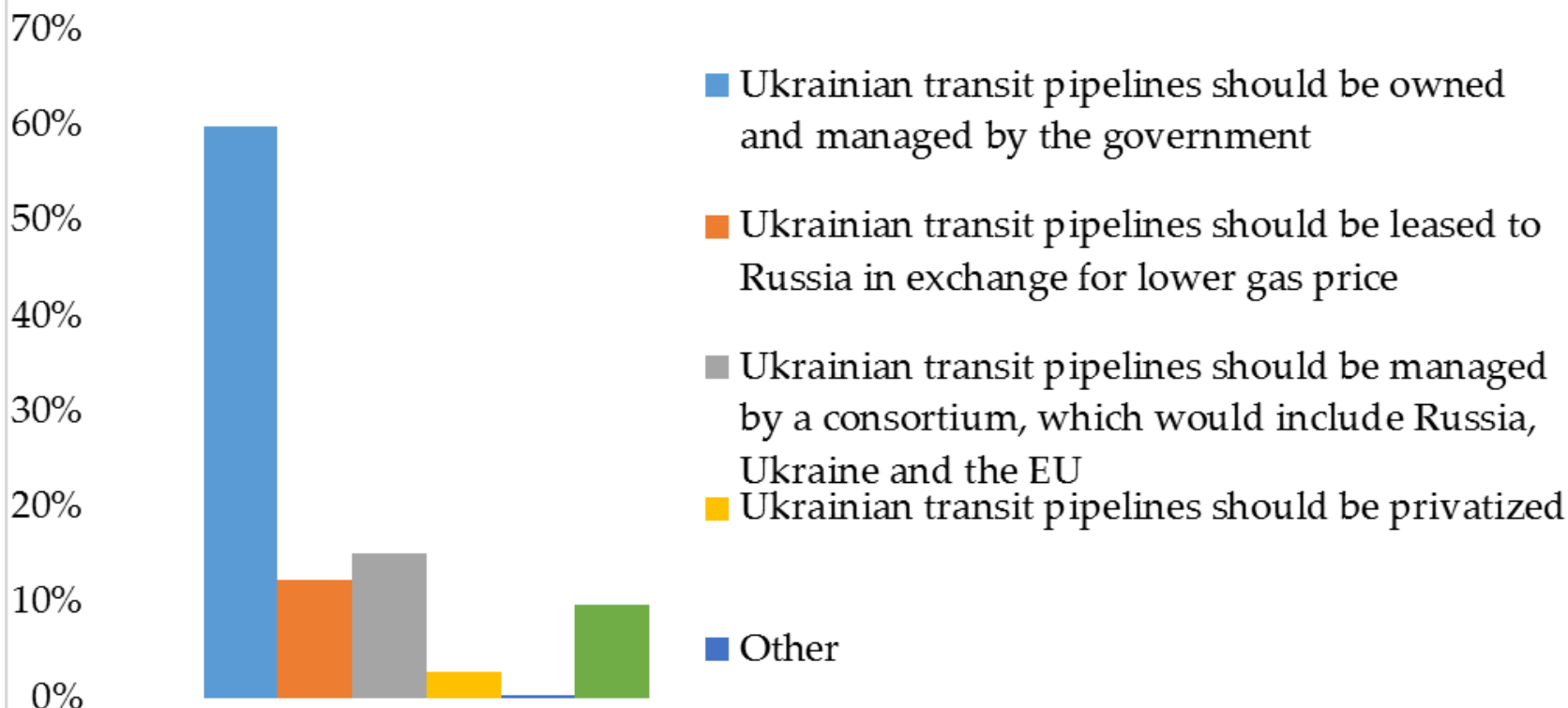
Ukrainians were asked how they thought their country should react to Russia's threat to cut off Ukraine's gas supplies



Razumkov Centre (2006)

Ukraine's strategic weapon – gas transit pipelines

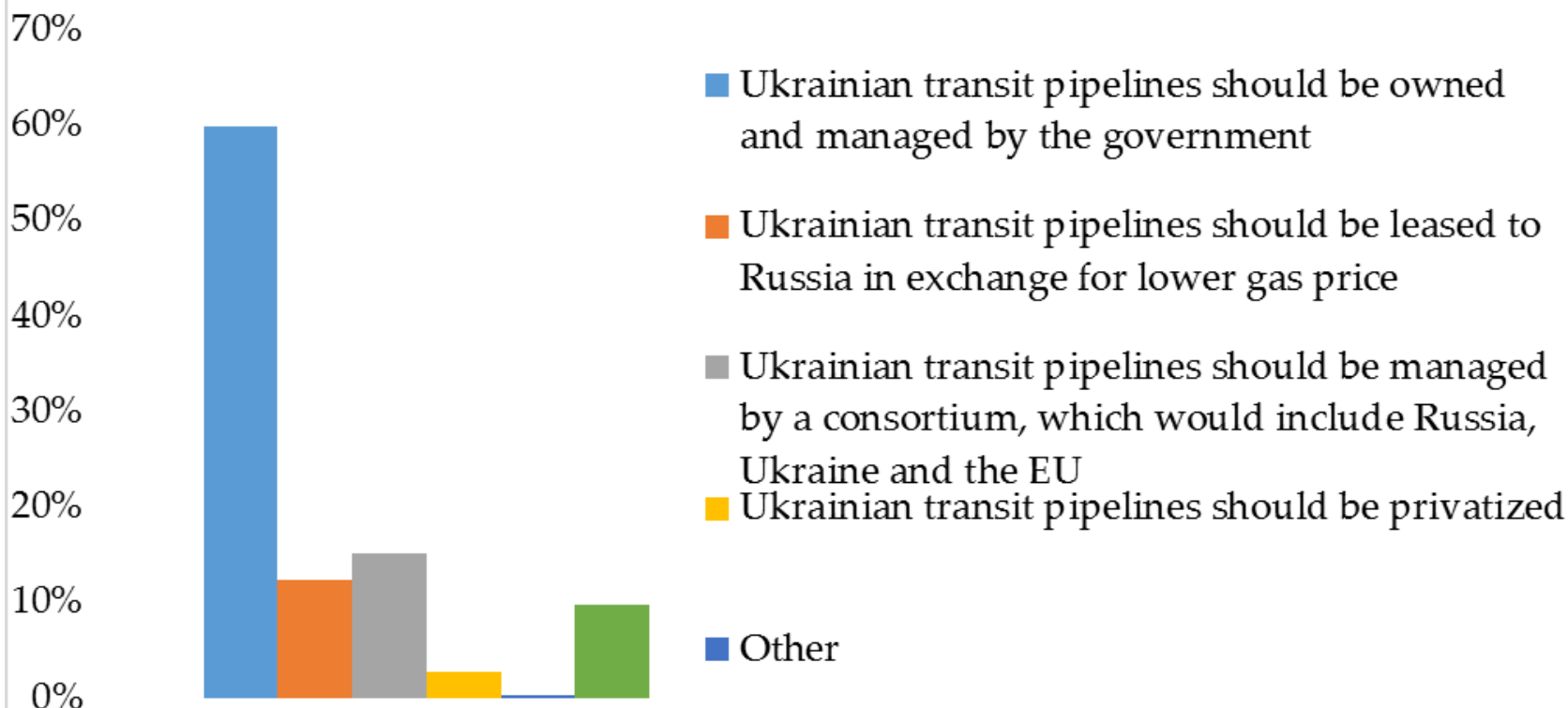
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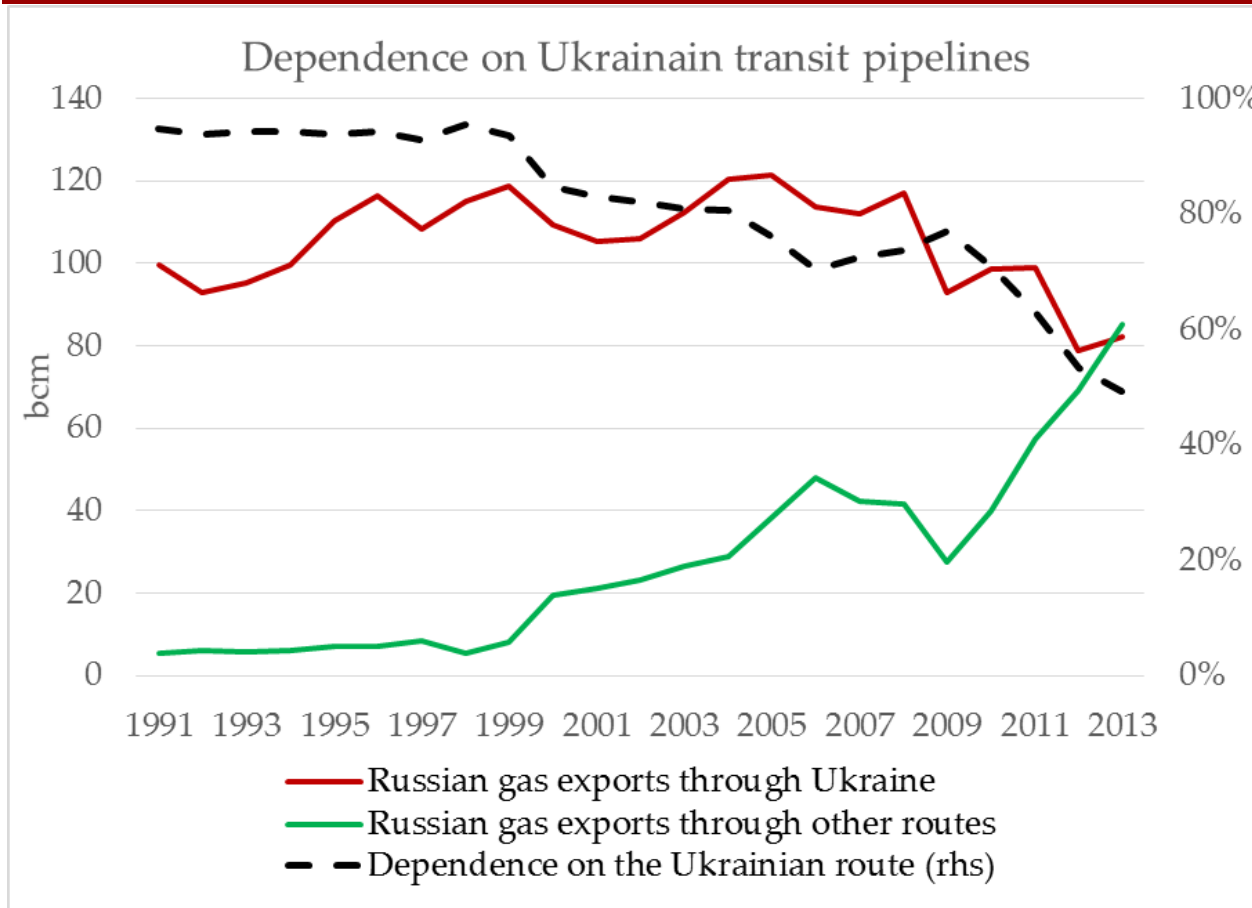
Ukraine's strategic weapon – gas transit pipelines

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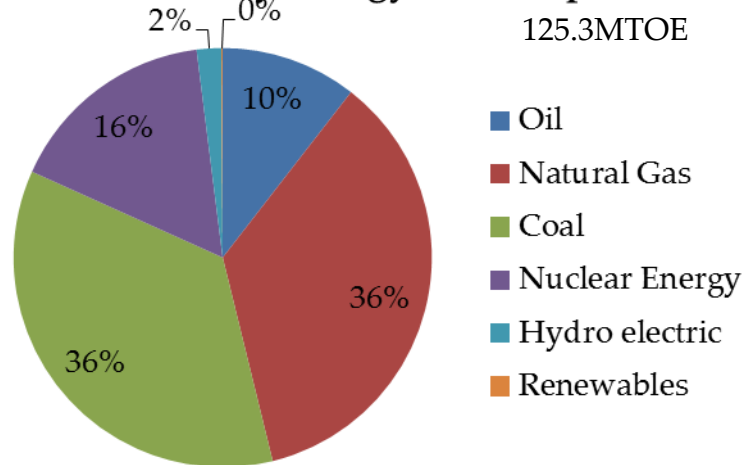
Ukraine's gas transit pipelines - strategic weapon?



- Reduction in Ukraine's gas transit volume to Europe is due to diversion of gas to Nord Stream (Russia-Germany pipeline)
- Russia was able to diversify away from Ukraine since 1991 reducing its reliance on Ukraine from 95% to 49% at the moment
- After the South Stream, another bypass pipeline, is completed Russia's dependence on Ukraine will zero

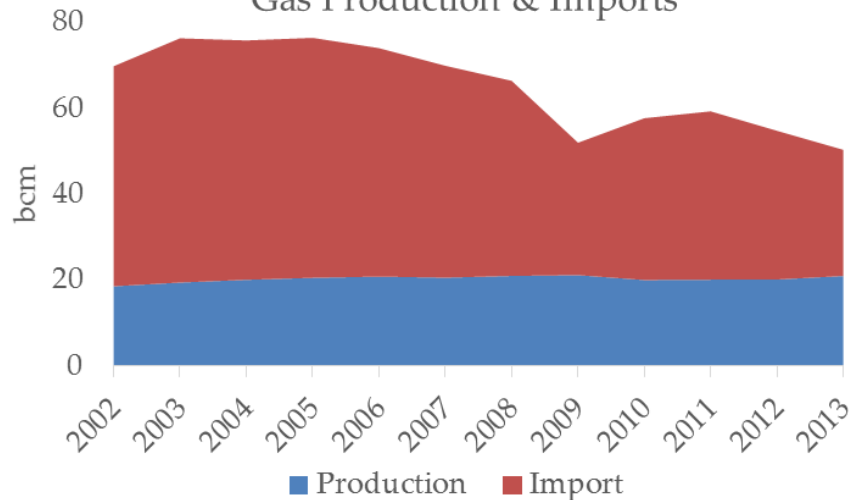
Ukraine's gas sector

Ukraine's Primary Energy Consumption

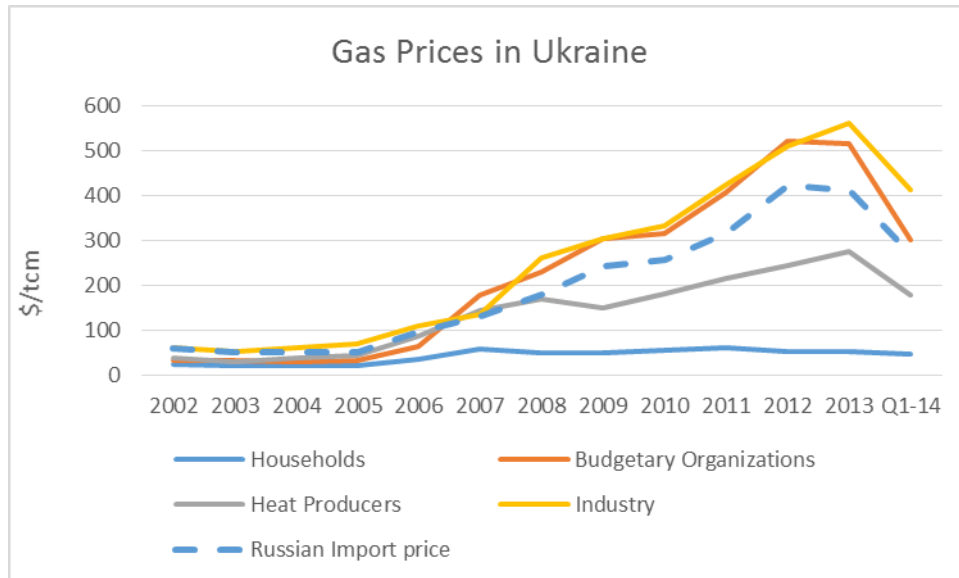
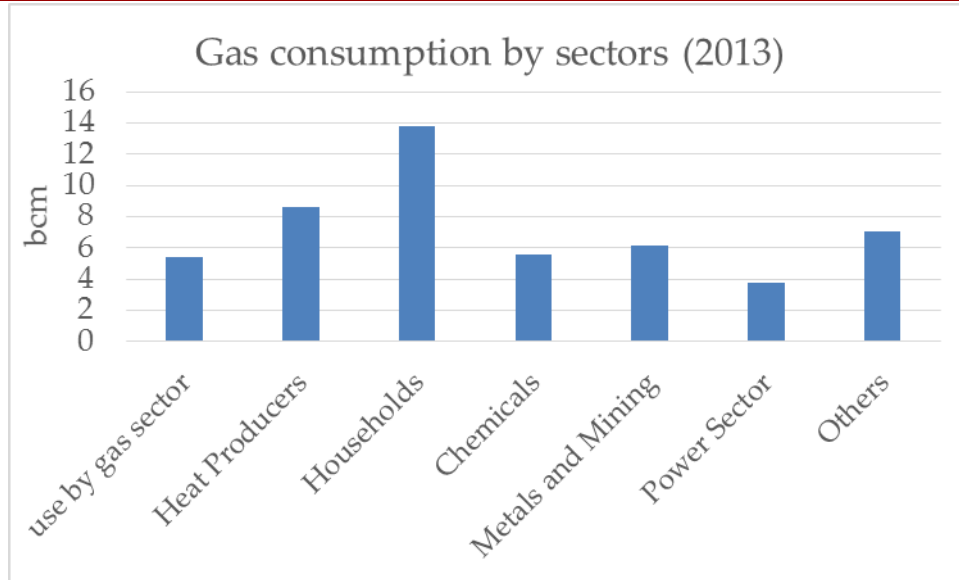


- The share of gas in Ukraine's primary energy consumption is comparable to that of UK or Turkey
- Ukraine's economic structure and particularly the (dis)organization of the gas sector makes this fuel extremely important and highly visible on Ukraine's political agenda (and Europe's/Russia's agenda as well)
- Ukraine's dependence on Russian is high (60% in 2013)

Gas Production & Imports

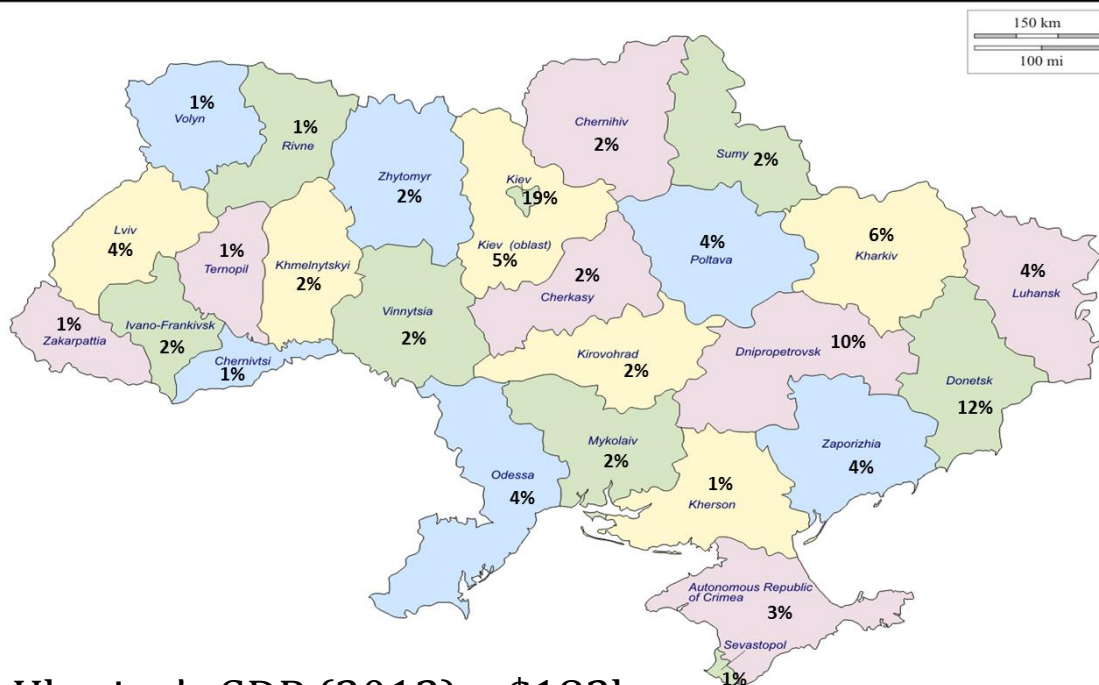


Ukraine's gas sector

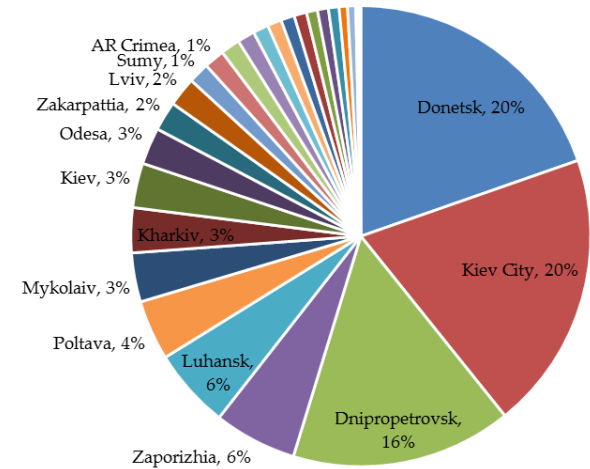


- Households and heat producers account for about half of total gas consumption
- Chemicals, metals and mining, power sectors account for one-third of consumption
- Gas pricing:
 - Gas price for households and heat producers are under-priced relative to import price (marginal price)
 - Domestic gas production could only be used for household consumption and heat production
 - Industry, powergen and other consumers pay prices pegged to import price from Russia

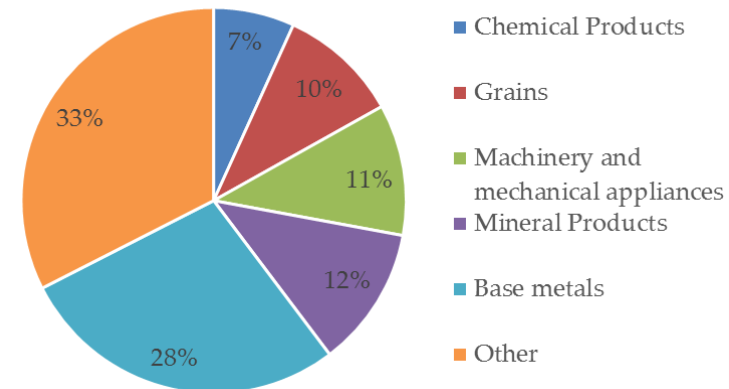
Ukraine's economy



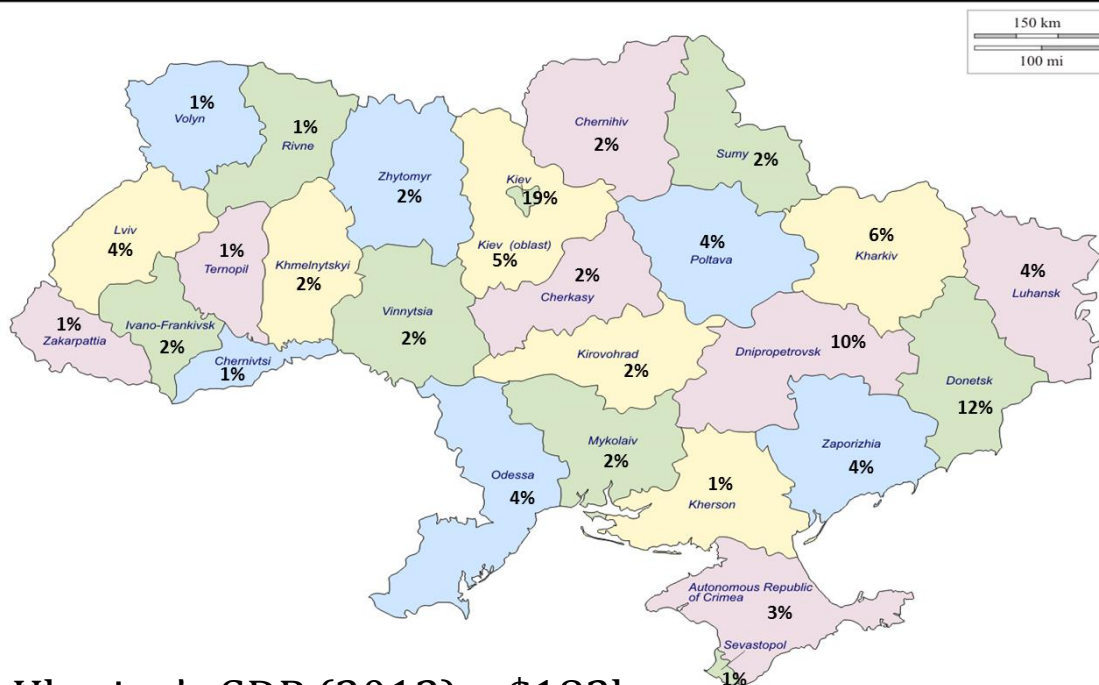
Ukraine's export by regions



Ukraine's export structure

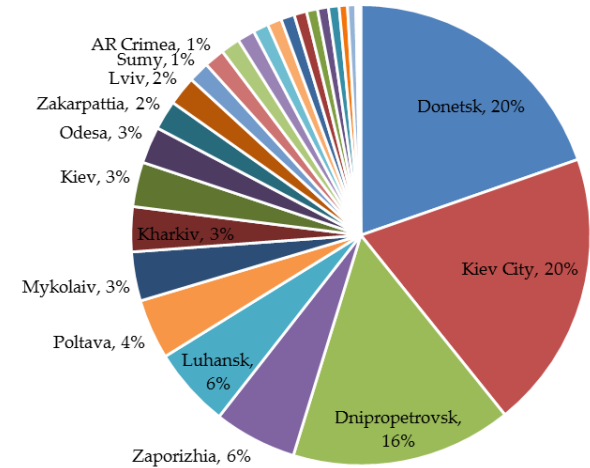


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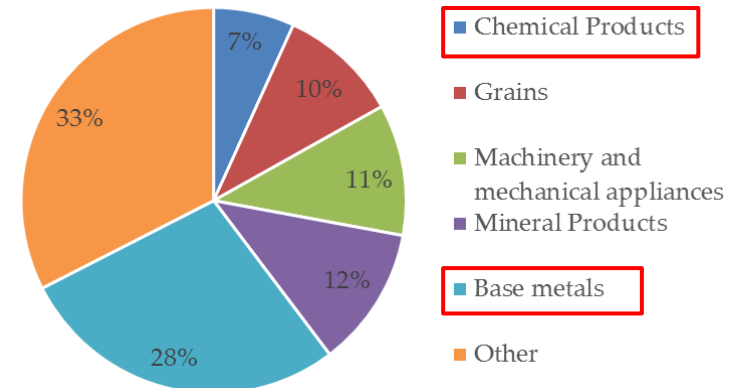


Ukraine's GDP (2012) = \$182bn

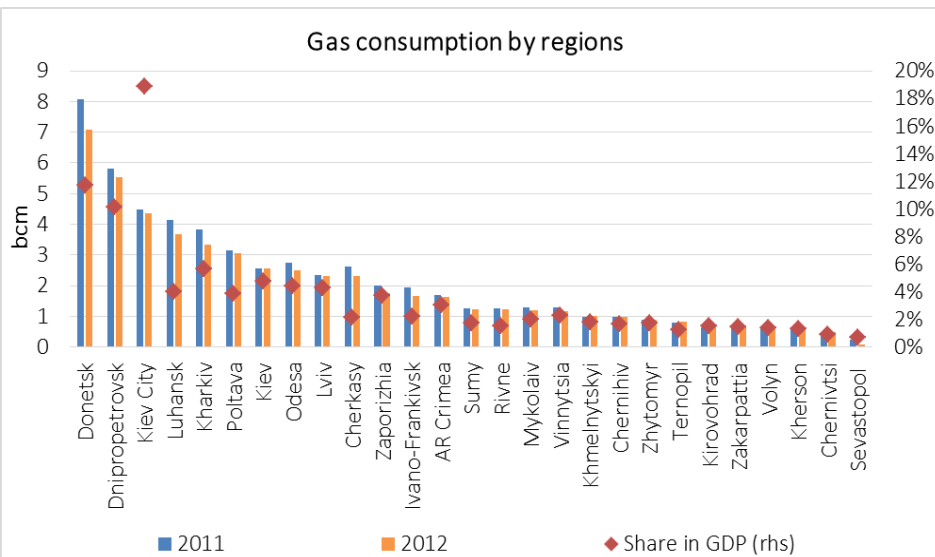
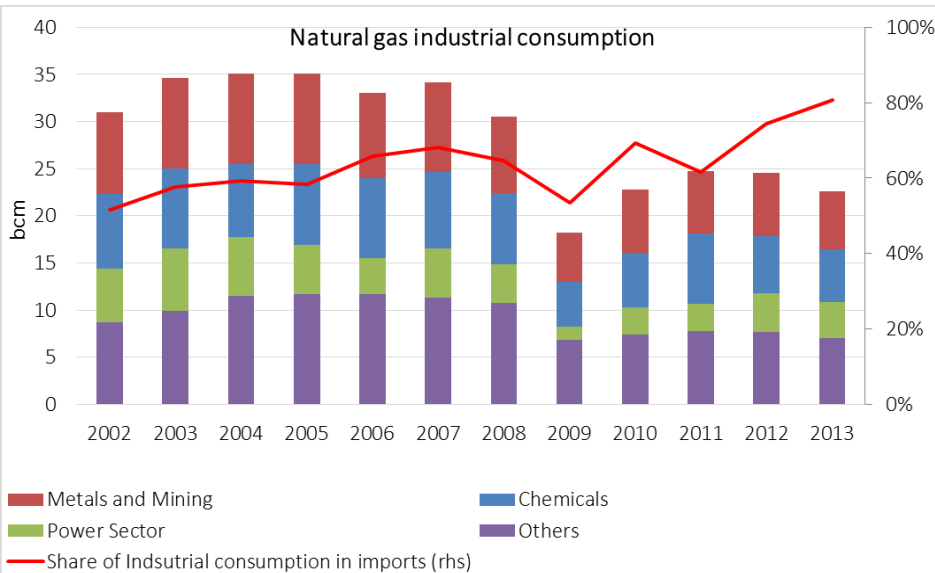
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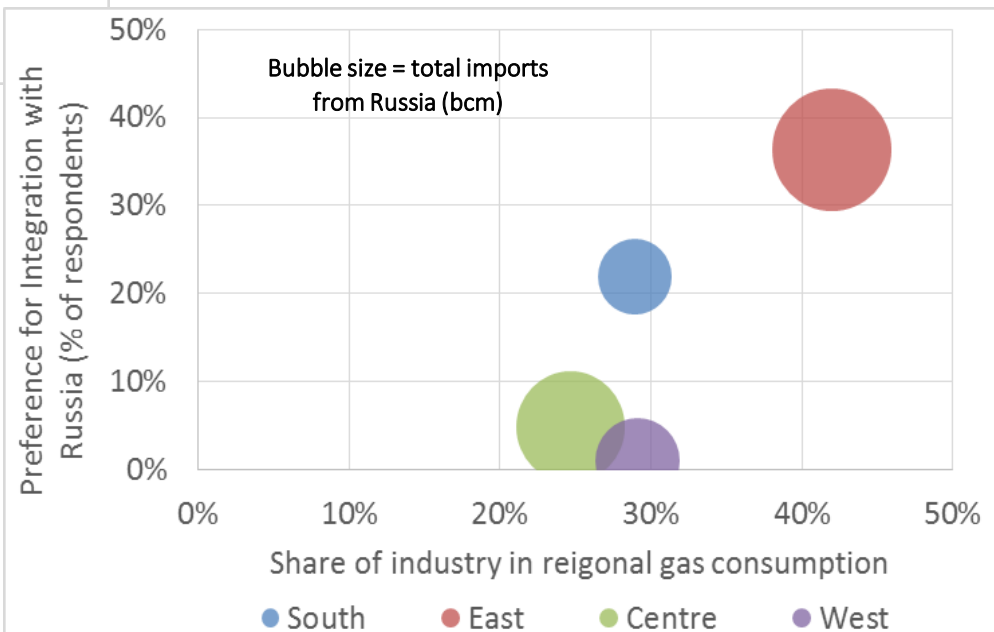
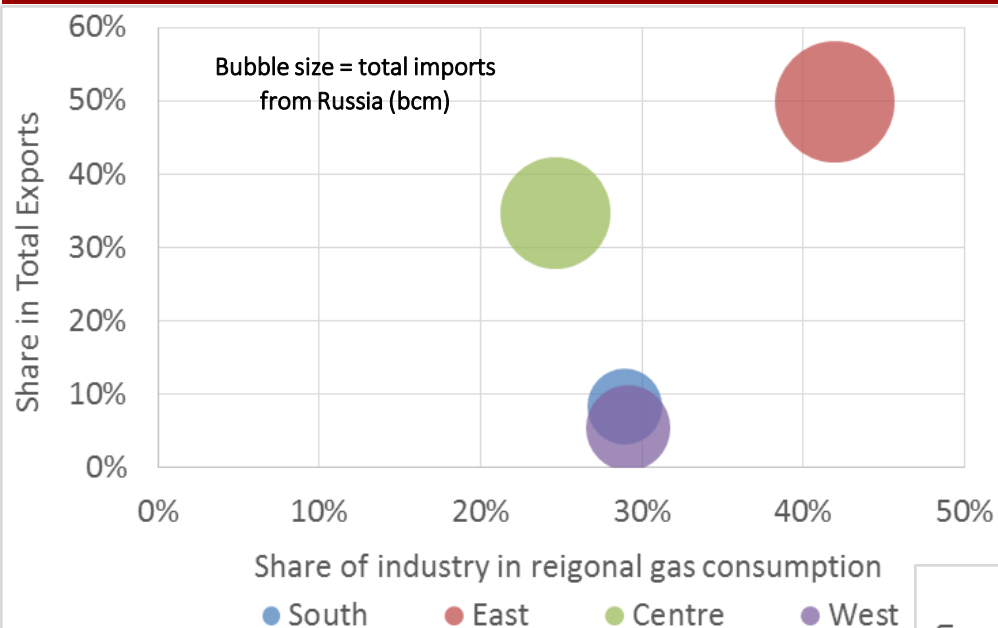


Ukrainian industrial gas consumption

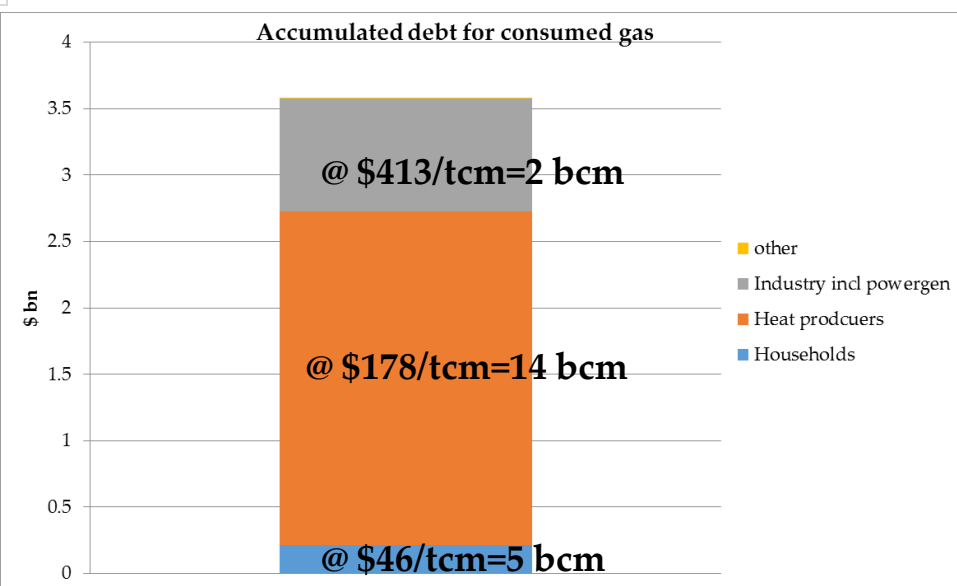
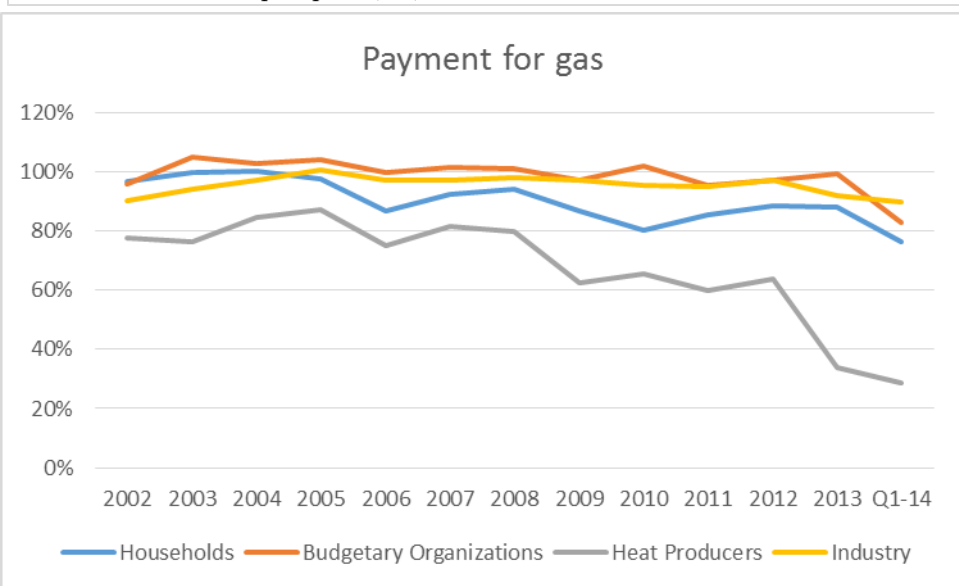
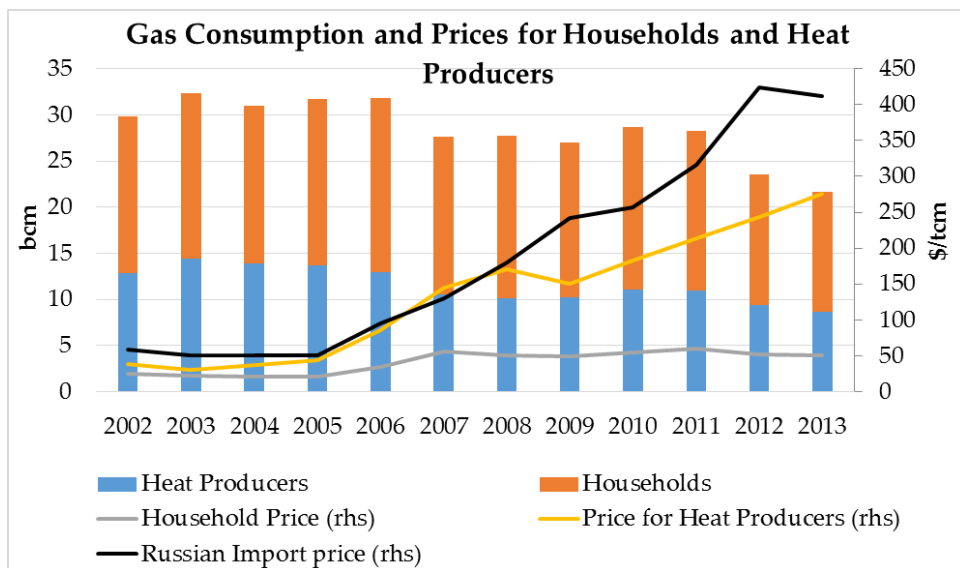


- There are six major fertiliser plants located mainly in the eastern part of Ukraine; they consume 7 – 8 bcm/a
- They are highly sensitive to price of gas: gas price represents $\frac{3}{4}$ of the cost of a unit of nitrogen fertilizer
- The steel sector consumes ca. 8 – 9 bcm/a; plants are located in the eastern part of the country, (Donetsk, Dnipropetrovsk, and Zaporozhye regions)
- These plants are grossly inefficient:
 - Energy costs represent 50% of total costs (global average: 20% – 25%)

Gas and domestic politics

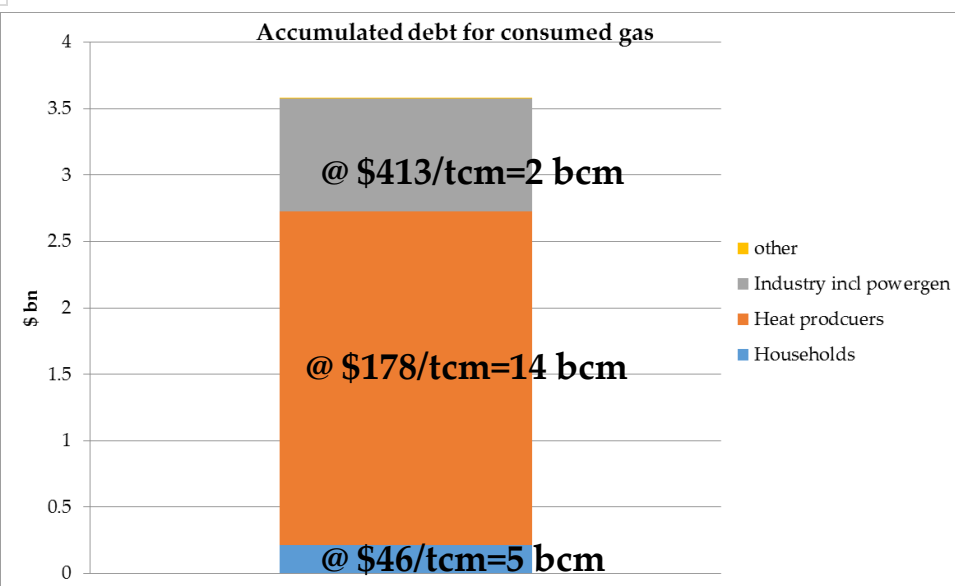
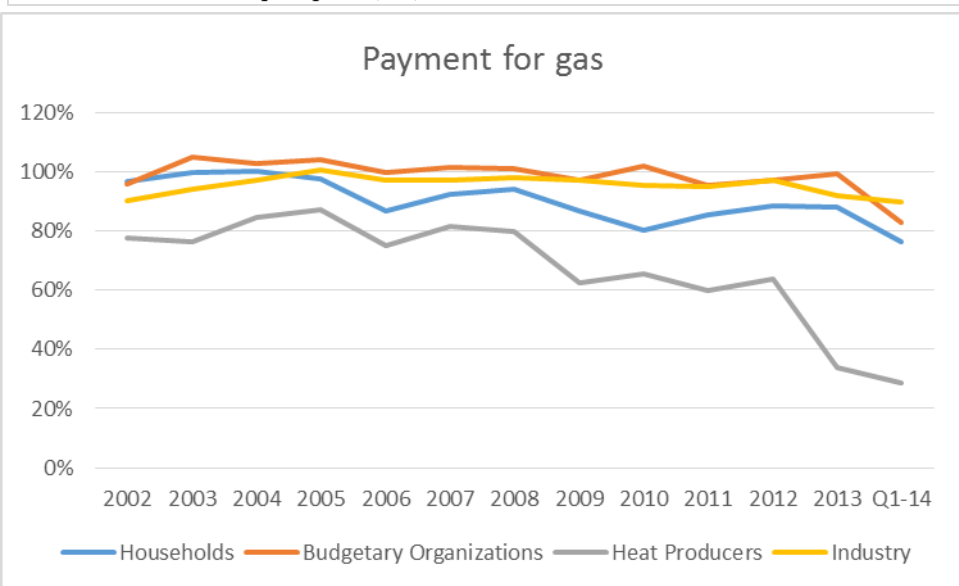
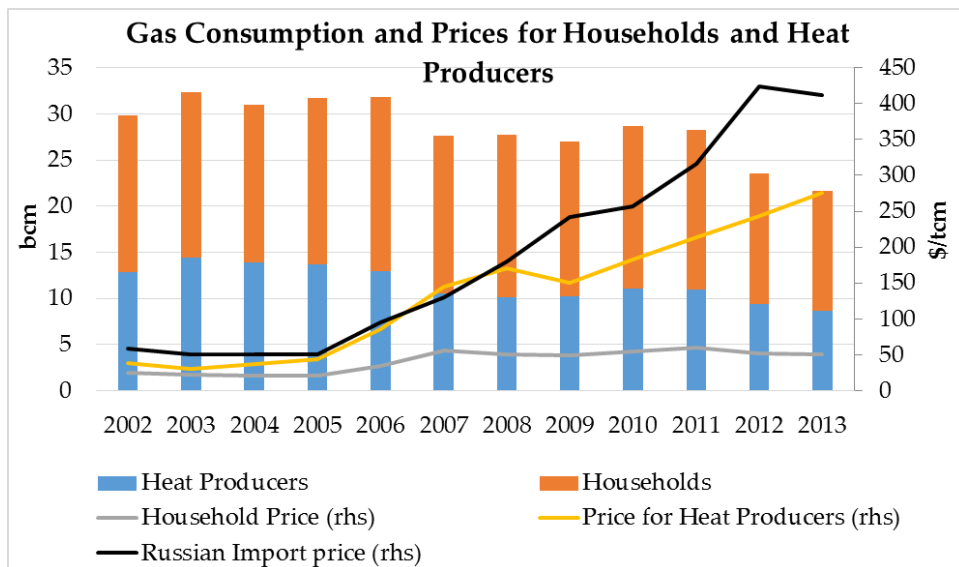


Households and district heating: consumption, prices and payments

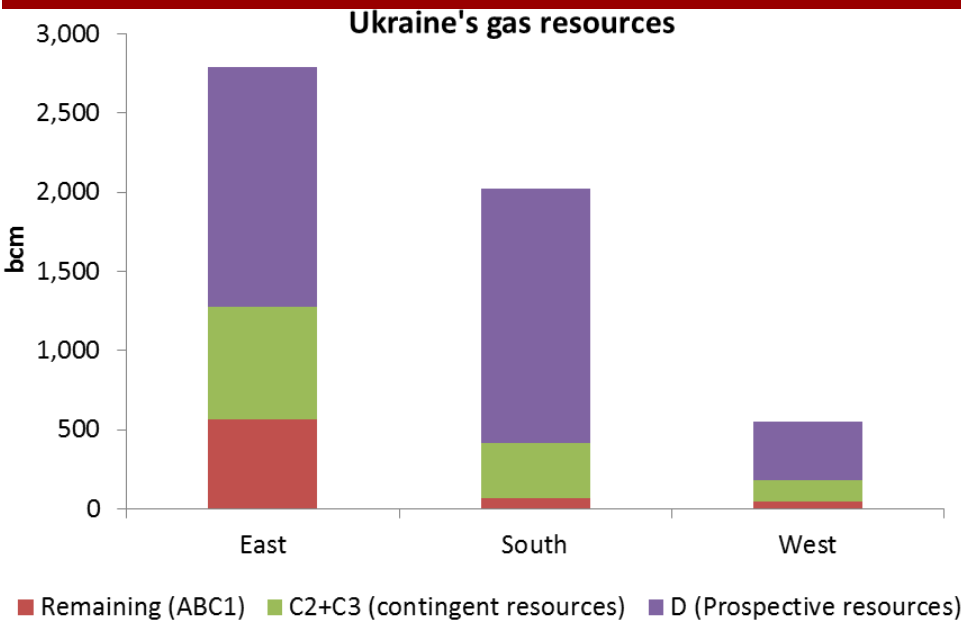


Households and district heating: consumption, prices and payments

- Ukraine's gas problem is mainly driven by heat producers who are:
 - (quasi) owned by local city councils
 - Highly sensitive to price increase
 - Grossly inefficient (30% loss of energy)
 - Really bad customers: not paying for gas - -> partly due to non-payment from the state budget



Ukraine's Natural Gas Potential



- Ukraine about 1.8 trillion cubic metres of gas, or 33 years of annual consumption at the level of 55 bcm/a
 - 52% of remaining and potential resources is in the East
 - 38% is in the South,
 - and only 10% is in the West

Market framework is not supportive of investment in new field development and exploration of more risky resources:

- Currently gas producers should sell all gas to domestic consumers @ regulated prices of \$50-60/tcm;
- The LRMC for new gas is \$150-250/tcm

Unconventional Gas Resources in Ukraine



- Three shale gas basins:
 1. Dnieper-Donets (East),
 2. Carpathian Foreland (West),
 3. Moesian Platform (Southwest)
- Estimated resources:
 - East: 312 (76) Tcf ~ 36 years
 - West: 362 (72) Tcf ~ 34 years
 - Southwest: 48 (10) Tcf ~ 5 years

Source: ARI, 2013 as cited in EIA 2013

Unconventional Gas Resources in Ukraine

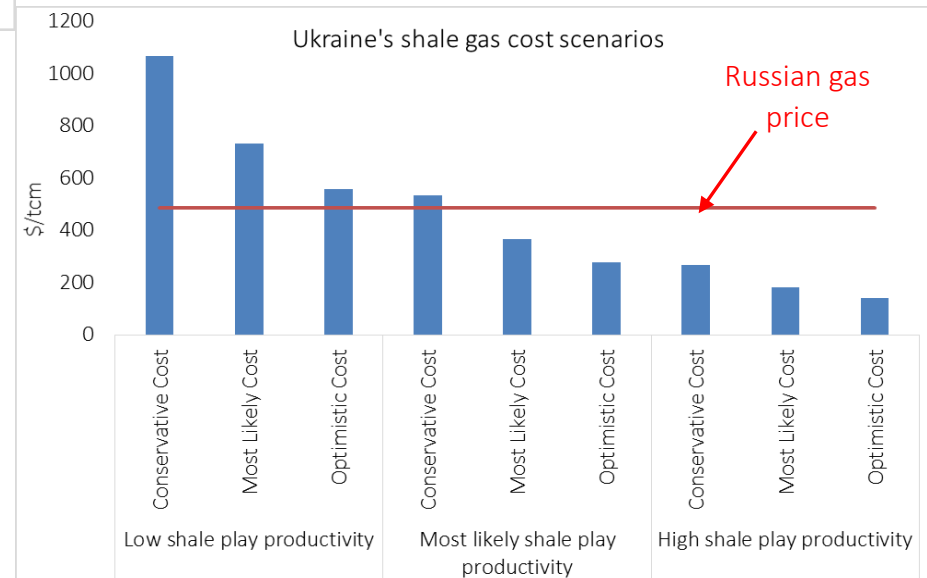
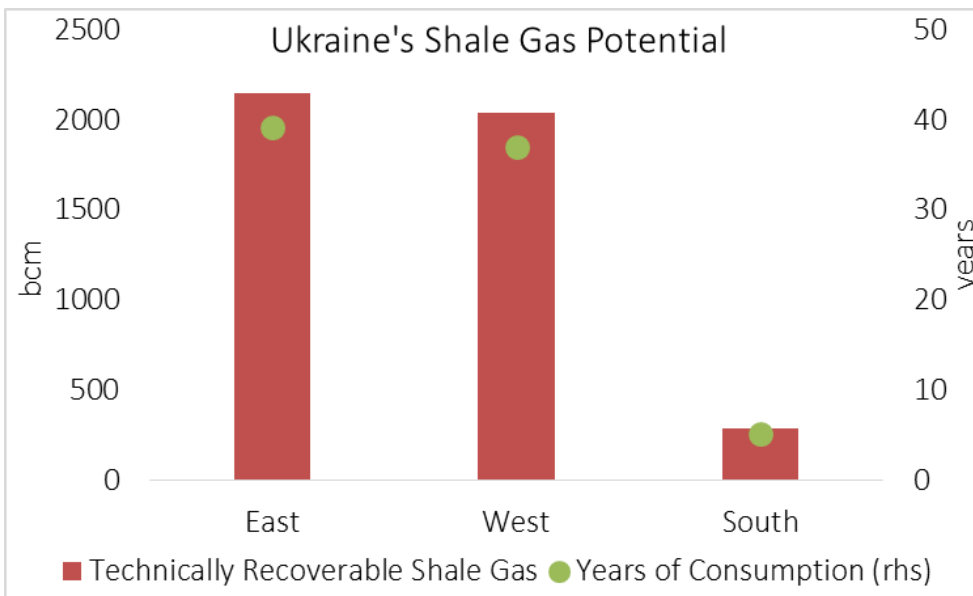


Eastern regions of Ukraine are very important for shale gas development:

- these regions could serve as the basis to develop upstream logistics because of the existing gas production infrastructure and other developed industrial activities (machinery building etc);
- losing these regions would impose higher costs to develop shale gas in the other regions.

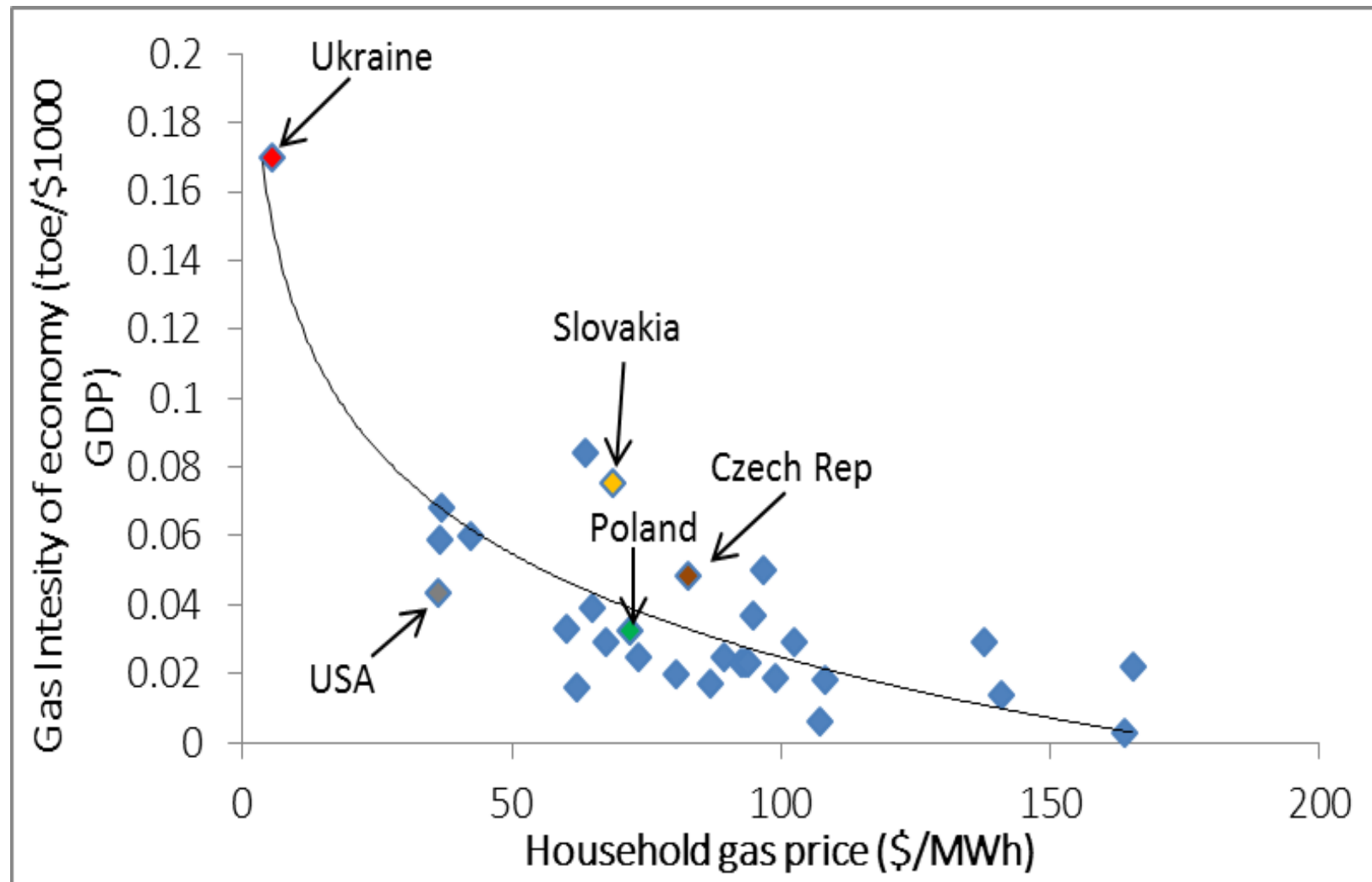
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Ukraine's Natural Gas Potential



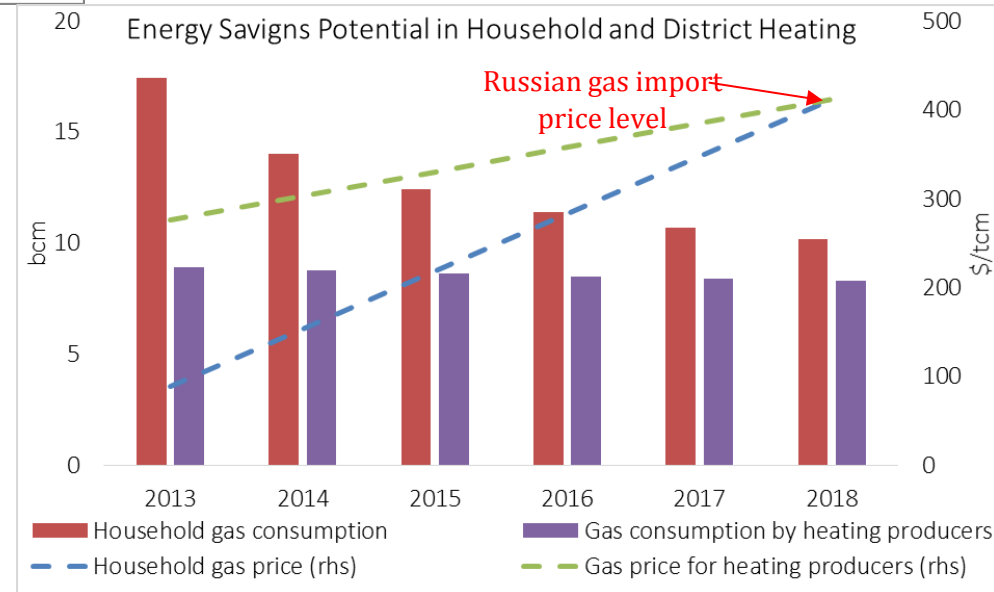
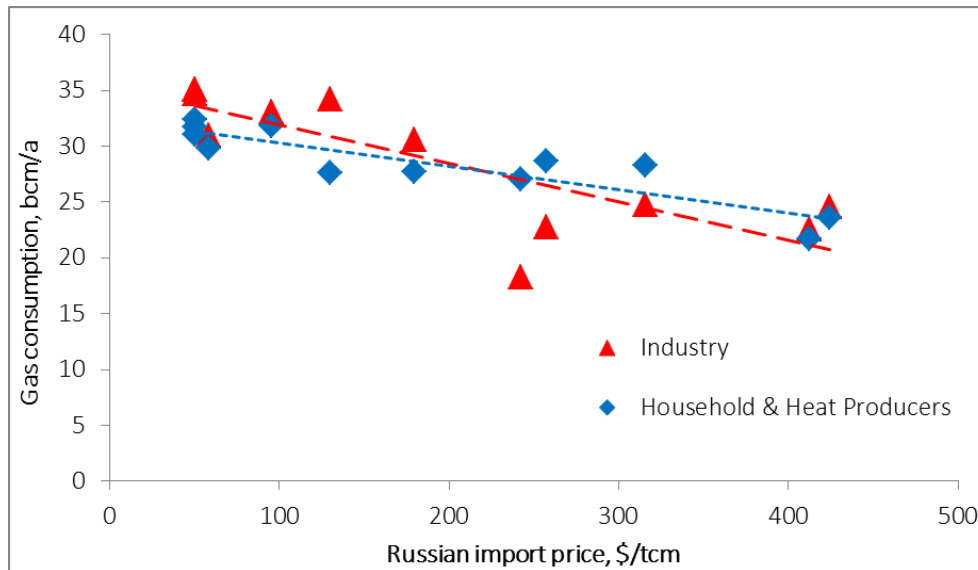
Ukraine's Natural Gas Potential

Ukraine's gas pricing policy – untapped 'unconventional' resource



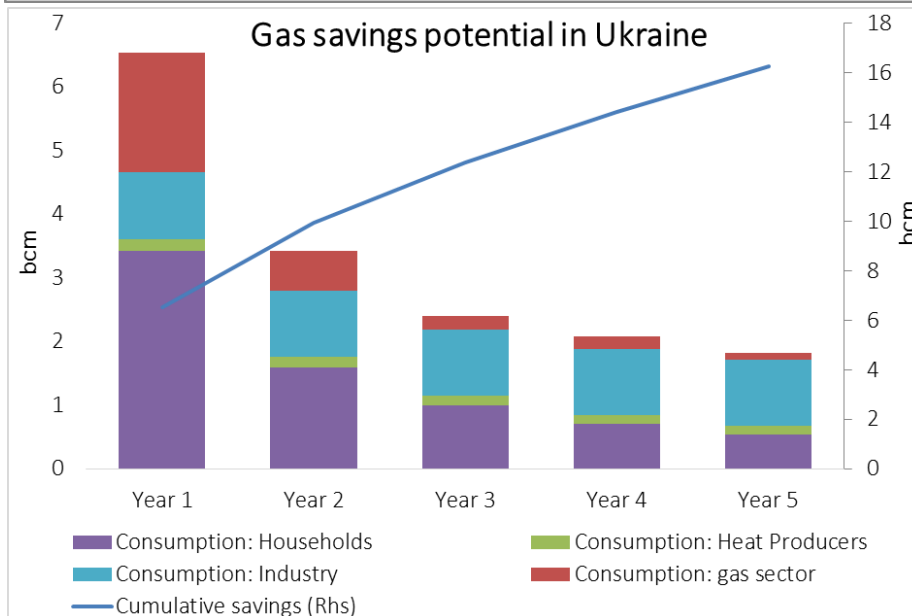
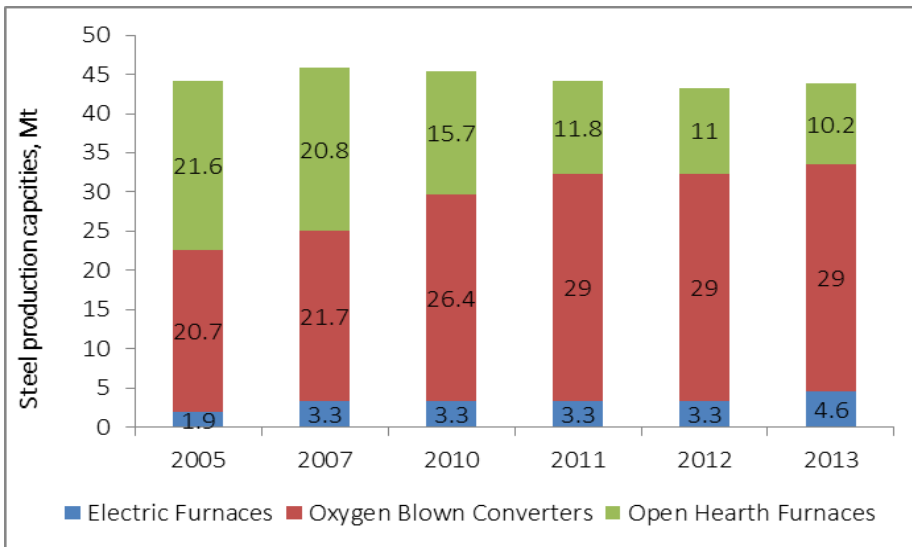
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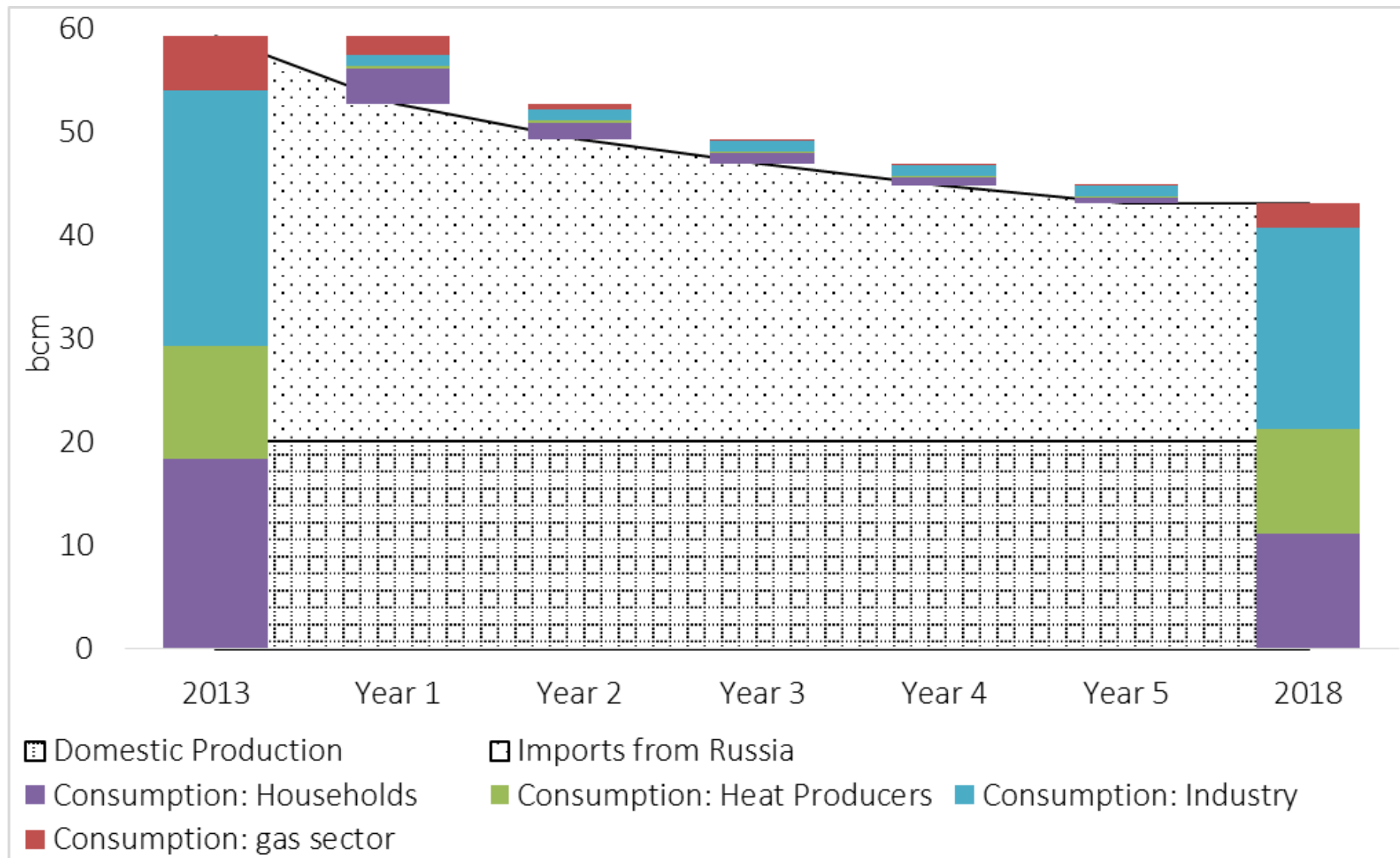
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- Steel and chemical plants could potentially reduce their gas consumption by 25-50%:
 - Depends on partial to full modernization of production processes etc
- Gas consumption by the gas sector itself could also save up to 50%:
 - modernization of compressor stations along transit routes
- Massive energy savings potential is however in the residential sector
 - Increasing household price to the import parity level could save up to 42%

Ukraine's Natural Gas Potential

Ukraine's gas pricing policy – untapped 'unconventional' resource



Conclusions

- The “east-west” political divide in Ukraine is not only a matter of cultural factors. These differences are underscored by Russian gas, which has a powerful impact on the economic and hence political choices of Ukraine’s regions and the country’s domestic politics.
- Cheap gas is important to Ukraine’s economy than the advantages that come from transporting Russian gas
- This is precisely why there has been such a strong incentive for Ukrainian politicians to bargain with Russia for cheap gas in exchange for keeping gas transit fee low and most importantly **secure**.
- Gas pricing reforms and investment in energy efficiency is Europe’s policy option to increase SoS at no cost
- There might be some distributional consequences for low-income households in Ukraine but this would be offset by direct assistance from government due to increased receipts from higher prices

Thank you

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