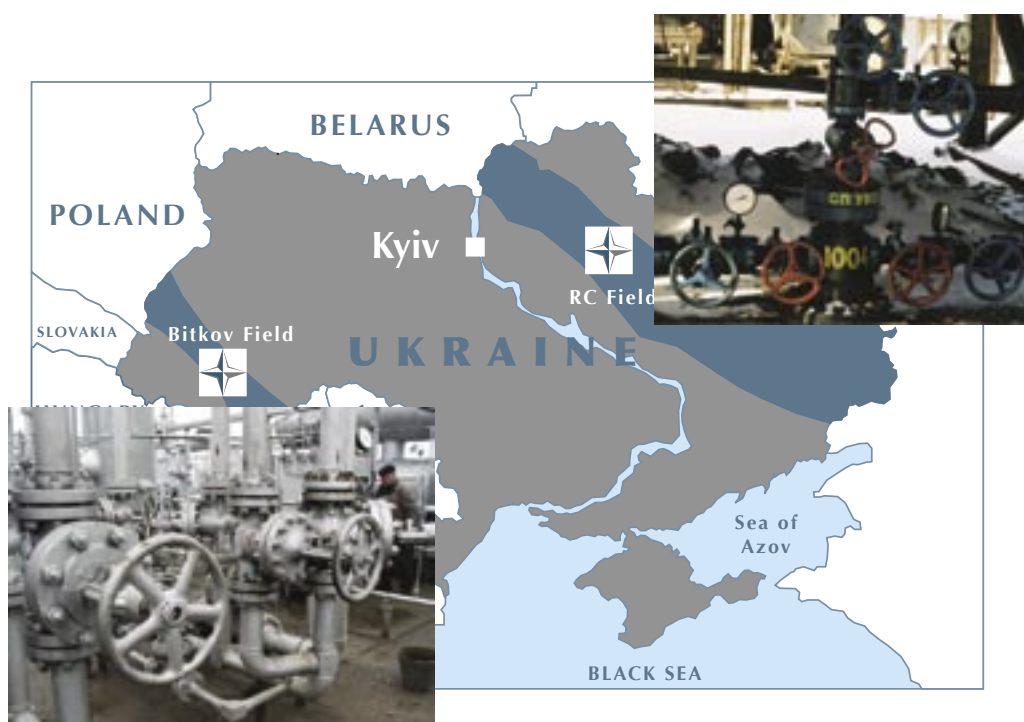


## Cardinal Resources (CDL)



*Cardinal's existing in-production fields will benefit from liberalisation of the domestic gas market while their "in-country" experience and relationships offer the potential to participate in further projects.*

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## Key Points

*Ukraine's energy dependence, its transition to a market economy and aspirations for western integration will drive reform of the domestic gas market as well as development and exploration opportunities for operators who can bring western expertise to the industry. Cardinal's existing in-production fields will benefit from a potential 3-fold increase in prices from liberalisation while their "in-country" experience and relationships offer the potential to participate in further projects.*

### KEY POINTS

- **Programme of drilling and workovers to expand production at existing fields**

A programme of 47 new drill locations and 14 workovers are planned to realise Cardinal's estimated net recoverable reserves of 110.6 Bscfe or 18.4 MMboe. 70% of resources are classed as "Proven" (a 90% probability of economic recovery). (Source: ECL Scott Pickford)

- **Cardinal's existing interests will benefit from liberalisation of the domestic gas market:**

Ukraine is committed to transitioning to a market economy and aspires to greater integration with Europe. The domestic gas market is heavily regulated with prices less than a third of international levels. While politically fraught, the government is moving to market based energy pricing.

- **Liberalisation will be underpinned by push for greater domestic production**

Ukraine is heavily dependent on imported energy. Security of supply is a major national concern and will underpin the move to liberalisation of the market as a way of increasing returns to operators and increased domestic production.

- **Demand for western know how to improve productivity and exploration**

The push for greater domestic production will also offer opportunities for operators with western expertise to participate. Cardinal has been operating in Ukraine since 1995 and is well positioned to take advantage of these opportunities.

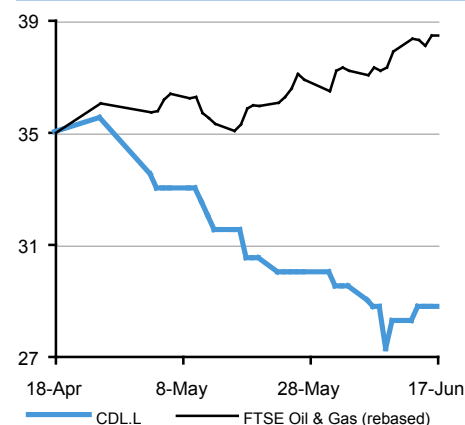
- **More favourable political outlook, reducing sovereign risk premiums**

Ukraine's more favourable political and economic outlook is already evident in Fitch Ratings upgrade of Ukrainian sovereign debt from B+ to BB- in January 2005.

- **Re-establishment of 45% NPI in RC Field will remove uncertainty**

The Company believe they have the legal right to re-assert their full NPI in the RC Field, however investors will remain cautious given the legal uncertainties of Former Soviet Union countries. However, the current share price seems to fully discount any possibility of recovery.

### Price chart - CDL.L



### Our valuation

<b>Value per share (p)</b>	<b>34</b>
- equivalent to US\$/MMboe	3.00

After re-establishing 45% NPI in RC Field:

<b>Value per share (p)</b>	<b>76</b>
- equivalent to US\$/MMboe	3.01

Quote	London AIM Market
Ticker	CDL.L
Hi-Lo last 12 mos. (p)	34.5-27.25
Shares issued (m)	87.8
Fully diluted (m)	130.5
Market Cap'n (£m)	25.2
Management ownership (%)	11.2
Broker:	Fox-Davies Capital

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*Company analysis*

Sam Kiri, CFA

## Overview

### **Cardinal Resources – a producing Ukrainian oil & gas E&P company**

Cardinal is an independent energy company engaged in the exploration and production (E&P) of oil and gas in Ukraine. Cardinal's strategy is to develop its existing assets by a programme of new drilling and improve performance by utilising modern western technology. Cardinal has been active in Ukraine since 1995.

Cardinal's net recoverable reserves are estimated to be 110.6 Bscfe (billion standard cubic feet of gas equivalent) or 18.4 MMboe (million barrels of oil equivalent).

*(Source: ECL Scott Pickford)*

### **High portion of P1 reserves and already in production**

The recent issues surrounding estimates of reserves at Regal Petroleum have highlighted that reserves are only estimates. Cardinal's existing production and the high level of reserves classed as having a 90% chance of economic recovery ("P1 reserves") provide significant comfort.

### **Domestic economic reform will lead to higher domestic gas prices**

The Ukrainian economy is transitioning to a western market based economy. Currently the domestic gas market is characterised by a rationing mechanism with market-based activity at the fringes. In 2004, the average difference between market and regulated prices was as high as 50%. Authorities are engaged in the politically fraught process of a move to market based energy pricing.

### **Possibility of direct access to European markets**

The country is strategically located at one of two major transit corridors for oil and gas from Russia and the CIS to the European market. Oil and gas prices are significantly higher in the European markets.

### **Geopolitical/energy security concerns underpin increased western involvement**

Ukraine imports over 80% of its oil and 76% of its gas requirements despite having sizeable domestic reserves. Ukraine's drive to greater domestic production offers opportunities for western operators and will underpin the drive to market based pricing to encourage development and western involvement.

### **Continuing high energy prices make E&P improvements attractive**

International energy prices have risen dramatically over the last few years. With continuing strong growth in the Chinese economy and uncertainty in the key oil producing areas, energy prices are likely to remain high for the immediate future.

### **Transitional economies bring opportunities, but also risk**

As with any transitional economy there are considerable risks. While both major political parties have shown a tremendous commitment to open economic policies, changes in the political direction of the country or the fluctuating relations between Ukraine, the EU and Russia are a significant source of uncertainty.

## Location of Cardinal Resources projects



### Properties:

Cardinal has interests in two producing properties in partnership with Ukraine's largest state controlled oil producer: a gasfield at Rudivsko-Chernovozavodske in the east of the country and an oil field at Bytkiv-Babchenske in the west.

- **Rudivsko-Chernovozavodske (RC) Field – underdeveloped producing gasfield:**

The Rudivsko-Chernovozavodske (RC) Field has estimated reserves remaining of 1.36 Tscf gas and 30.01 MMbbl of condensate. Approximately 67% of reserves are classed as P1. Cardinal is committed to meet 16.57% of the field's development and operating costs (its "Working interest") and receives a 14.91% share of net profits (its "Net Profit Interest" or "NPI") under the terms of a Joint Activity Agreement ("JAA") with Ukrnafta. A production licence has been granted until 2024. The JAA wells are currently producing 172 bcpd and 18.0 MMscf.

- **Bytkiv Field – in production oilfield:**

The Bytkiv Field has estimated remaining reserves of 540 MMbbl of oil and 161.5 Bscf of gas. Greater than 90% of reserves are classed as P1. The field is currently producing 228 bopd and 0.7 MMscf. Cardinal has a 56% Working Interest and 45% NPI through its UkrCarpatOil joint venture with Ukrnafta. UkrCarpatOil holds a production licence until 2015.

### Significant plans for further development and drilling

Cardinal plan to develop their existing assets through a programme of further drilling and by utilising western technology to increase production. 47 new drill locations are planned and 14 workovers of existing wells.

### A right to re-establish 45% NPI in the RC Field

Prior to its reorganisation, the Company historically underfunded its commitments under the terms of its JAA. Subject to negotiated compensating payments, Cardinal has the right to re-establish a 45% NPI in the RC field. Prior to this, the Company's current level of management control of the JAA reflects their strong relationship with Ukrnafta. Historic underfunding amounted to approximate US\$6.5m.

## Valuation

Cardinal operate in an environment of considerable uncertainty. They are exposed to both volatile energy prices and the political and economic risks of a transitioning economy.

For investors, the key points of concern are:

- **Political risk:** while the political and economic outlook has become significantly more favourable, it continues to be volatile;
- **The long term level of domestic energy prices:** while there is a strong commitment to economic reform and developing domestic supplies, the timing and speed of liberalisation is uncertain as are future global energy price trends. It is likely that liberalisation will cushion falling global energy prices for Cardinal;
- **Uncertainty over re-establishing Cardinal's 45% NPI in the RC Field:** while the Company believe they have the legal right to re-assert their full NPI, investors will remain cautious given the legal uncertainties of FSU countries. However, the current share price seems to fully discount any possibility of recovering the 42p per share in value.

The use of Net Present Value (NPV) calculations for specific projects is well established in the resource sector. However these models don't recognise the option value implicit in most resource projects and represent a "value" if the estimated resource is there. Consequently, it is well recognised that most resource projects trade well above their NPVs – particularly the more marginal the project.

We have valued Cardinal's resource interests using an option approach. This approach provides a more accurate valuation of resource projects and explicitly accounts for Cardinal's exposure to volatile energy prices and the implicit optionality.<sup>1</sup>

Our base case assumes:

- Global energy prices trend to more normal levels (in real terms) as risk and demand premiums dissipate over the coming decade;
- And Ukrainian domestic prices are liberalised cushioning the impact of moderating global energy prices on Cardinal's value.

Cardinal also plan to identify and develop further projects. Given the limited information, we do not ascribed any value to the Company's ability to identify and exploit other opportunities at this time.

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<sup>1</sup> Specifically, we have assumed energy prices are volatile but return to their long run mean eventually, i.e., they are mean-reverting.

## Valuation Summary – Cardinal Resources

	US\$m
RC Field	49.0
Bytkiv Field	10.8
Less: Operating Costs	14.7
Less: Bellwether Production Payment	0.9
<b>Total Expected Operating Value</b>	<b>44.2</b>
Add: Cash	19.1
<b>Total enterprise value</b>	<b>63.3</b>
Less: Bank & Other Debt	0.0
<b>Total Value for Equity Claims</b>	<b>63.3</b>
Less: Warrants + Options	8.0
<b>Value Attributable to Equity Holders</b>	<b>55.2</b>
Oustanding Shares (m)	87.8
Value per share (US\$)	0.63
<b>Value per share (£)</b>	<b>0.34</b>

After re-establishing 45% NPI in RC Field:

<b>Value per share (£)</b>	<b>0.76</b>
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## Value of Rudivsko-Chernovozavodske Field

	US\$m	Assumptions
Net Value of Reserve	79.2	Gas prices are mean reverting
less: Capex	13.8	Long run level of 2.5 Mscf
<b>Value (pre-corp tax)</b>	<b>65.4</b>	Avg. time to revert 8 years
- per MMboe (P1+P2)	4.0	Inflationary price growth 2.0 %

### Reserves

P1 (90% probability of recovery)	67%
P2 (50% probability of recovery)	33%
Net Profit Share	14.9%

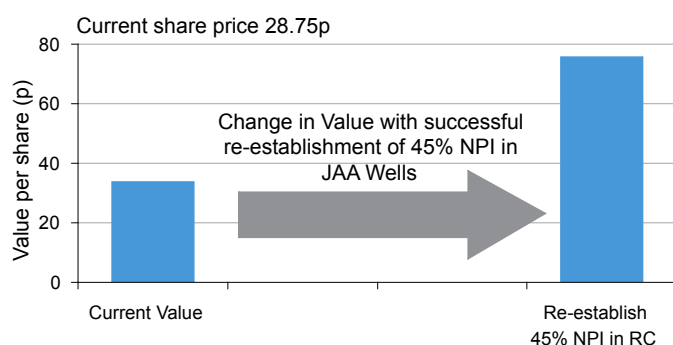
## Sensitivity to Gas Market Assumptions

Value per share (£/share)	Mscf	Time to revert (years)		
		4	8	13
Long run assumption		4	8	13
Historic Ukrainian domestic level	1.50	0.22	0.23	0.24
Historic gas price (1985-now)	2.50	0.34	<b>0.34</b>	0.33
Recent European prices	3.25	0.43	0.40	0.38

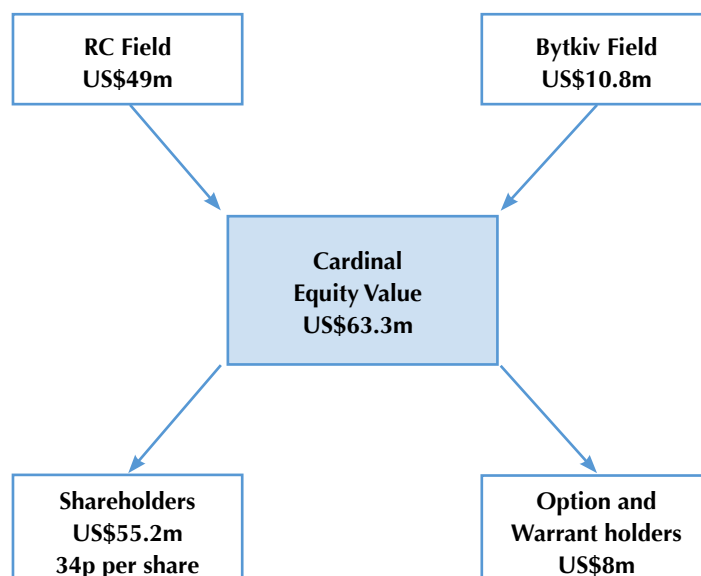
### Change in Valuation

	Time to revert (years)			
Long run assumption	4	8	13	
Historic Ukrainian domestic level	1.50	-34%	-30%	-27%
Historic gas price (1985-now)	2.50	3%	Base Case	-2%
Recent European prices	3.25	28%	20%	13%

## Value change with reestablishment of 45% NPI in JAA wells



## Components of Cardinal Resources equity value



## Value of Bytkiv Field

	US\$m	Assumptions
Net Value of Reserve	22.5	Oil prices are mean reverting
less: Capex	8.1	Long run level (1900-now) 20.66 US\$/bbl
<b>Value (pre-corp tax)</b>	<b>14.4</b>	Avg. time to revert 8 years
- per MMboe (P1+P2)	6.5	Volatility 23.0 %
		Inflationary price growth 2.0 %

### Reserves

P1 (90% probability of recovery)	90%
P2 (50% probability of recovery)	10%
Net Profit Share	45.0%

## Sensitivity to Oil Market Assumptions

Value per share (£/share)	US\$/bbl	Time to revert (years)		
		4	8	13
Long run assumption		4	8	13
Historic oil price levels (1900-now)	20.66	0.32	<b>0.34</b>	0.35
Oil prices moderate	30.00	0.34	0.36	0.36
Permanently high oil prices	40.00	0.37	0.38	0.38

### Change in Valuation

	Time to revert (years)			
Long run assumption	4	8	13	
Historic oil price levels (1900-now)	20.66	-4%	Base Case	4%
Oil prices moderate	30.00	3%	6%	9%
Permanently high oil prices	40.00	11%	12%	13%

## Key Risks

### *Political, Regulatory and Legal*

**Risk of invalidity:** Ukrainian law formerly required foreign economic contracts between a local Company and a non-resident foreign Company to be signed by two properly authorized representatives. While Ukrnafta has not satisfied this requirement, it has provided an assurance, in a letter dated 7 August 1997, that the two agreements relative to the RC and Bytkiv Fields will not be considered illegal under any circumstances.

**Interference in business:** As with many transition economies, state intervention in business continues to prevail in Ukraine. On a number of recent occasions the government has suspended oil auctions and in general regulates the gas market. In particular, the government may require domestic producers to sell oil or gas at well below market rates for indeterminate periods of time.

**Legal systems:** As with many newer market economies, Ukraine has a less developed legal system than more established economies. This may make effective legal redress or enforcement difficult and existing agreements susceptible to revision or cancellation.

**Political instability:** the Company's interests in Ukraine may be adversely affected by social, economic or political instability, hyperinflation, changes in the Company's ability to repatriate profits or laws governing foreign ownership. While both major political parties have shown a tremendous commitment to open economic policies, changes in the political direction of the country or the fluctuating relations between Ukraine, the EU and Russia may adversely affect the Company's interests.

### *Technical and Operational*

**Estimates of reserves:** While Cardinal's existing production record and the high portion of P1 reserves provide comfort, the extent of reserves in the RC and Bytkiv fields remain estimates and the actual output may be lower than the original estimates.

**Drilling and operating:** Exploration, development and production activities may be subject to teething problems related to technological and other operational issues resulting in reduced output, higher operating expenses etc, leading to lower than expected earnings.

**Infrastructure:** The ability of the Company to successfully market and sell its oil and gas production is dependent on the availability of processing and refining facilities and transportation infrastructure. Development of these is outside the control of the Company.

### *Market and Economic*

**Market Risk:** Oil & natural gas prices are volatile and Cardinal's fortunes may be affected due to their price fluctuations. In addition to lower earnings, a steep price decline could affect the carrying value of Cardinal's assets, its borrowing capacity, etc. Cardinal could also face delays in obtaining licenses to export its products

from relevant regulatory authorities. Cardinal's target however is the local market and we do not consider delays in obtaining export licenses as a major concern.

**Competition:** The Ukrainian government may invite other oil and gas companies to operate and may allow them to bid for E&P licenses in both Ukraine and other countries where Cardinal would seek a foothold. Cardinal's existing relationships with other players in the Ukrainian market provides comfort in this regard.

**Currency Risk:** Several financial obligations of Cardinal are US dollar denominated and a weakness in the local currency may introduce a severe burden on the Company. Cardinal does not currently engage in active hedging to minimize exchange rate risk.

### ***Reliance on Key Partner***

**Reliance on Ukrnafta:** Cardinal's existing assets are subject to agreements with the majority state-owned Ukrnafta. Ukrnafta's subsidiary currently operates the field and Ukrnafta's parent company owns the infrastructure used to transport the JAA's gas production.

**Reliance on relationship:** Ukrnafta is likely to be particularly subject to political pressure and change. The Ukrainian press has speculated that the new government intends to put the management of a number of state-owned assets out to tender – possibly including Ukrnafta. While this may result in a new proactive senior management at Ukrnafta, it could disrupt Cardinal's existing relationship with them and result in Cardinal losing equal representation on the management committee of the JAA under which it holds its interest in the RC Field until it re-establishes its contributions to the JAA.

**Ability to implement work programme:** According to the JV and JAA agreements, Ukrnafta and Cardinal must mutually agree on an annual work programme budget for operations in both the RC and Bytkiv fields. There could be disagreements with regard to these programmes, technical issues, expansions etc, leading to delays and cost overruns or Cardinal having to assume all development costs on specific wells.

### ***Environmental***

**Environmental damage:** A principle of Ukrainian environmental law is that any environmental damage caused by activity outside established standards and restrictions must be fully compensated. While the Company believes they operate within all requirements there is always the risk of significant environmental issues in any oil and gas production activity. These can incur substantial losses.

**Escalating requirements:** Ukraine is looking to become more integrated with the EU economy. It is likely that this will entail increasingly demanding environmental standards, which may result in significant increases in ongoing and clean up expenses.

# Cardinal Resources

Cardinal Resources plc is an independent energy company engaged in the exploration and production (E&P) of oil and gas in Ukraine.

Cardinal's strategy is to develop its existing assets by a programme of new drilling and by utilising modern western technology to improve the performance of existing wells. Cardinal is also seeking incremental development opportunities and to acquire additional properties with proven producing reserves.

## Cardinal's capital structure

	million
Outstanding shares	87.8
Mgmt Options & Warrants	13.1
Investor Warrants	25.7
Advisor Warrants	3.9
<b>Fully diluted</b>	<b>130.5</b>

## Cardinal's reserves

Field	Bscf	MMbbl	Total Bscfe	Total MMBOE
RC*	89.5	1.3	97.3	16.2
Bytkiv	3.1	1.7	13.3	2.2
<b>Total</b>	<b>92.6</b>	<b>3.0</b>	<b>110.6</b>	<b>18.4</b>

\*14.91% NPI

After re-establishing 45% NPI in RC:

<b>Total</b>	<b>278.2</b>	<b>5.7</b>	<b>312.4</b>	<b>52.0</b>
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Source: ECL Scott Pickford

Cardinal has been operating in Ukraine through its fully owned subsidiary Carpat-sky Petroleum Inc. since 1995 and has interests in two producing oil and gas fields at Rudivsko-Chernovozavodske (the "RC Field") in the east of the country and Bytkiv-Babchenske (the "Bytkiv Field") in the west.

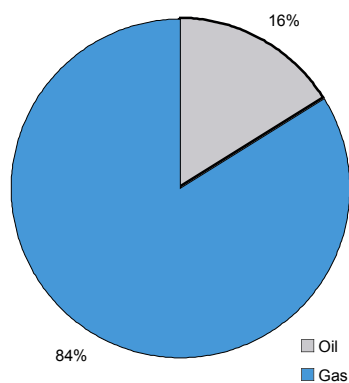
The expected net recoverable reserves attributable to Cardinal from the two properties are estimated to be 110.6 Bscfe (billion standard cubic feet of gas equivalent) or 18.4 MMBOE (million barrels of oil equivalent). (Source: ECL Scott Pickford)

Cardinal's existing assets are all subject to agreements with Ukrnafta, Ukraine's largest oil producing company. Ukrnafta operate 99 oil and gas fields comprising 2,220 oil and 239 gas wells in the western and eastern oil and gas producing regions of the country. Ukrnafta is a listed company majority owned by NAK, a full owned entity of the Ukrainian government. NAK also owns and operates Ukraine's gas transportation system through which Cardinal's gas production is distributed.

Cardinal's management believes they have developed a strong working relationship with Ukrnafta and have considerable experience in managing public oil and gas companies.

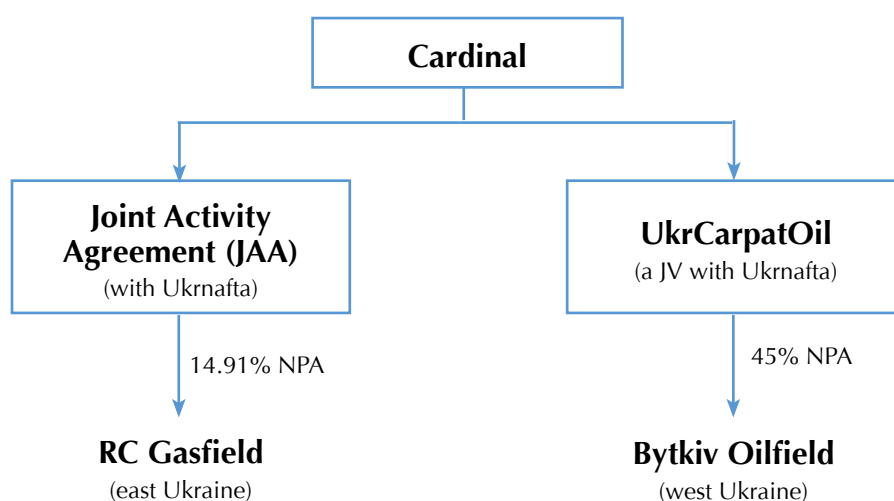
## Commodity mix of Cardinal Resources

Cardinal's share of est. reserves



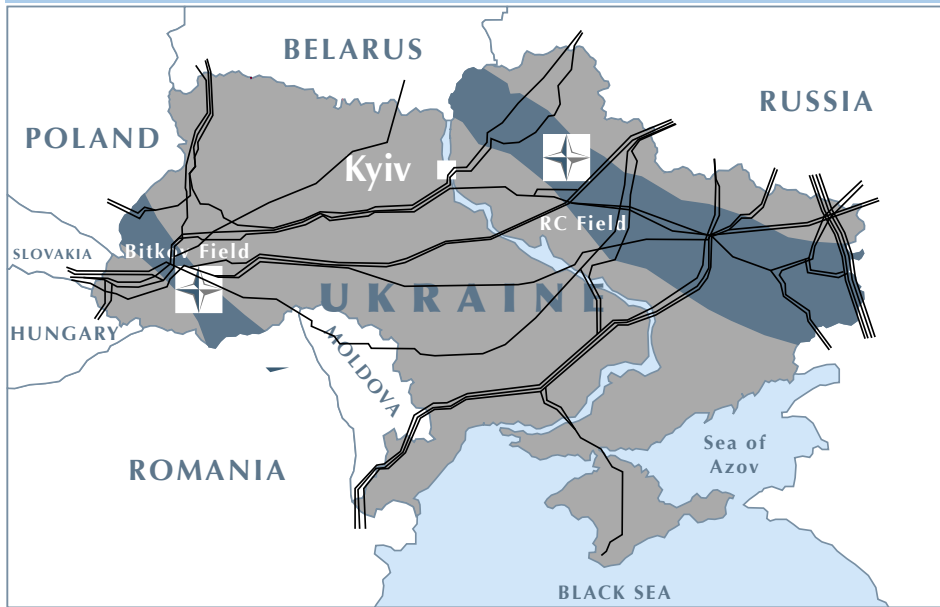
Source: ECL Scott Pickford

## Structure of Cardinal Resources



Operator: PNG (a subsidiary of Ukrnafta)  
Production licence holder:  
Ukrnafta (to 2024)

Operator: PNG  
Production licence holder:  
UkrCarpatOil (to 2015)



**Overview**

Ukraine is a country in major transition on several fronts: from a command to demand led economy; from agro/ industrial to consumption and service; from Russian dependency to ambitions for EU membership. Each of those axes carries unique problems and therefore risks for external investors. But the rewards potentially are large – and nowhere more so than in the energy sector.

Ukraine imports some 80% of its energy needs and most of those from Russia. On our projections that dependency threatens to grow. We estimate conservatively that Ukrainian electricity demand will grow by 80% over the next 30 years.

It needs urgently to develop local production to fill at least part of that rising demand. As that happens we expect local gas prices to close the gap on those achieved in Europe - recently some 3x higher.

The combination of rising demand and local pricing is a heady cocktail for external investors. It should be diluted with a realistic appraisal of the risks, many of which we describe here.

**Ukraine: the political environment**

The World Fact Book published by the CIA describes Ukraine in the following terms:

“Although final independence for Ukraine was achieved in 1991 with the dissolution of the USSR, democracy remained elusive as the legacy of state control and endemic corruption stalled efforts at economic reform, privatization, and civil liberties. A peaceful mass protest “Orange Revolution” in the closing months of 2004 forced the authorities to overturn a rigged presidential election and to allow a new internationally monitored vote that swept into power a reformist slate under Viktor YUSHCHENKO. The new government presents its citizens with hope that the country may at last attain true freedom and prosperity.”

The country profile authored by the UK Foreign and Commonwealth Office notes that:

“A new government was appointed on 4 February 2005 following the approval by the Rada (Ukrainian parliament) by a substantial majority of Yulia Tymoshenko as Prime Minister. EU integration is the dominant theme of the new government and the government’s ambitious programme has the goal of bringing Ukraine closer to the EU. The programme also confronts a number of the main domestic challenges in Ukraine, focusing on corruption as the number one problem. Crime and security will also be addressed and a new social policy agenda introduced, designed principally to tackle poverty. “

But the government has only a limited window of opportunity before the constitutional reforms that strengthen parliament at the expense of the President take effect later in the year and before it faces important parliamentary elections in March 2006.

Amnesty International, in its Report 2005, said

“Allegations of torture and ill-treatment in police detention were widespread. Demonstrations were banned and protesters were detained and harassed. Racist attacks were reported throughout the country.”

They noted however that their report covered the year ending December 2004 and have elsewhere expressed hope to the effect that the new Ukrainian government can take the occasion of its recent election to the UN Commission on Human Rights to effect change from the previous regime.

The picture that emerges from these and other testimonies is of a country in major transition from a Soviet state to a possible member of the European Union. En-route it has to address the legacy of human rights violations over many years.

Such transition carries significant country risk. The adoption of capitalist systems does not always fulfil the promise made to the people (ask the East Germans) and leaves political systems fragile in the early years.

Equally such transition is fertile ground for fraud and corruption. The recent conviction of the Russian oligarch Mikhail Khodorkovsky for tax evasion and fraud will haunt his former company Yukos, other such companies and individuals in the region and investors for some time. Moves to ensure more equitable distribution of natural wealth among the population would, we believe, go some way to assuage the concerns of potential external investors.

As if to underscore the political fragility comes news (or rumour) that members of President Yuschenko’s “entourage” “will not abandon attempts to remove Yulia Tymoshenko” his appointed Prime Minister (*source: Interfax May 24 2005*). President Yuschenko himself has subsequently admitted mistakes in appointing certain officials.

It is in direct policy areas that Ms Tymoshenko has most recently come under attack. The rising oil price globally was causing obvious problems in a country with per capita GDP of some US\$6,300 (*source: CIA World Factbook*; purchasing power parity basis). Tymoshenko's response was to cap oil prices prompting a fuel shortage and national outcry. The crisis embroiled the President (himself a former central bank governor) and probably provides the background to the rumours of efforts still to unseat her. Another factor which investors will wish to factor into their demanded risk premium.

### Ukraine: the economic environment

According to the CIA the Ukrainian economy measured an estimated US\$299bn in 2004 (PPP). It thus ranks 32nd in the world sandwiched between Saudi Arabia and Colombia. Among its European and central Asian peers (those in or en-route to the EU) it ranks 11th, this time between Belgium and Austria.

A different picture emerges when comparing per capita GDP. Ukraine's US\$6,600 (ppp, 2004 est.) ranks 115th globally and somewhere between that of the Dominican Republic and Fiji. Among its European and central Asian peers it ranks towards the bottom of the league table in such company as Bosnia and Herzegovina (US\$6,500) and Turkmenistan (US\$5,700).

Perhaps of most significance, given its EU aspirations, is that Ukrainian per capita GDP is less than a quarter of that of the EU (US\$26,900). Evidently if that gap can be closed (and most likely only through productivity improvements) the prize for citizens and external investors is huge. But of course that implies major structural reform including, almost inevitably, higher unemployment. That task has proved problematic to say the least in more developed economies such as France and Germany.

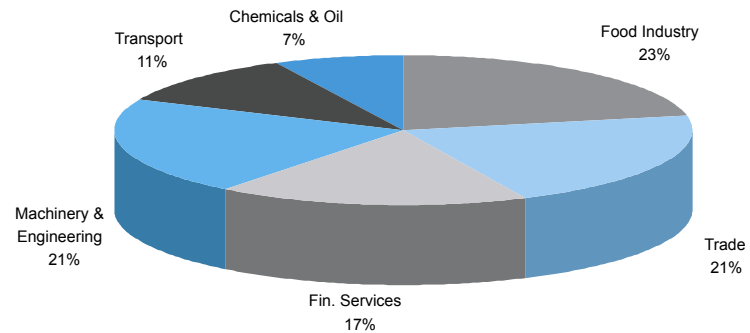
Ukraine sits in a commanding position geographically atop the Black Sea. It is surrounded, going clockwise from the South West, by Moldavia, Romania, Hungary, Slovakia, Poland, Belarus and Russia. Only Moldavia, Romania and Russia also have coastline on the Black Sea.

#### Key Ukrainian economic data

	2000	2001	2002	2003
GDP per head (US\$ at PPP)	4,040	4,586	4,897	5,240
GDP (% real change pa)	5.9	9.2	4.8	8.5
Government consumption (% of GDP)	7.12	8.03	8.1	7.8
Budget balance (% of GDP)	0.57	-0.29	0.78	-0.2
Consumer prices (% change pa; av)	28.2	11.96	0.76	5.21
Public debt (% of GDP)	44.38	35.96	33.7	29
Labour costs per hour (USD)	0.32	0.44	0.54	0.66
Recorded unemployment (%)	4.2	3.7	3.8	3.73
Current-account balance/GDP	4.74	3.69	7.65	6.3
Foreign-exchange reserves (US\$m)	1,352	2,955	4,241	6,730

Source: *Economist Intelligence Unit*

## Leading Sectors for Foreign Direct Investment



Source: Ukrainian State Statistics Committee

Although rich in mineral wealth, 56% of land use is devoted to arable farming. During the Soviet era Ukraine supplied a quarter of the agricultural needs of the Union.

But couple that high agricultural use to a negative population growth rate of 0.6%pa and a net emigration rate of 0.3%pa and the challenges for structural reform assume a sharper focus. Recall the difficulty of the reform challenge for France even with the help of the Common Agricultural Policy with figures of 33% arable land use, positive population growth rate of 0.4% pa and virtually zero net migration rate.

Unsurprisingly the high arable land use in Ukraine is not reflected in the shape of the overall economy. Agriculture accounts only for some 18% of total GDP with 45% from industry and 37% from services.

Ukraine economy also faces environmental challenges. There are noted issues surrounding the availability of drinking water in some regions, of air and water pollution and of deforestation. In addition of course is the radiation hazard still presented by the aftermath of the 1986 “melt-down” of the Chernobyl Nuclear Power Plant in the northeast of the country. To its credit the country is a signatory to most of the relevant international protocols and treaties – including Kyoto. Nonetheless rectifying such matters is not going to come easily or cheaply.

Note that Prime Minister Tymoshenko has recently called for feasibility studies with the aim of demonstrating Ukraine’s capability to develop full cycle nuclear reprocessing (i.e., including spent fuel and storage). She has also called for plans to be drawn-up to build a further 11 nuclear power stations under the aegis of Ergoatom (state owned nuclear authority) to reduce energy dependency on Russia.

The plans have drawn considerable scepticism from both within and without Ukraine. In an interview with the Berliner Zeitung newspaper, Herr Juergen Trittin

(German Environment Minister) said that “it is not clear how a country that could not find the money even to modernize existing reactors (Ukraine has two old ones) is going to finance the construction of new reactors.”

The energy dependency problem is of major proportions. Imports, especially of natural gas, represent some 85% of Ukraine’s energy demand. The problem for the economy is compounded with the stalled structural reform process. After independence in 1991 many prices were liberalised and the government established the legal framework necessary for a privatisation programme. Inevitably such reforms met resistance and became diluted or abandoned. The result today is industrial output at less than 40% of then levels in 1991.

Indeed the combination of high energy dependency and slow structural reform leave many observers fearing that the Ukrainian economy is unusually susceptible to external economic shock.

Some of those problems are gradually being addressed resulting in recently high GDP growth rates: 4.6% in 2002, 9.3% in 2003 and 12% in 2004est. The 2004 estimate puts Ukraine around number 6 in the world league table among Venezuela, Angola and Ethiopia.

It remains to be seen how the pace of growth progresses having in the recent election “irritated” Russia, one of its major trading partners hitherto, and in the face of a slowing western consumer.

### **Ukraine: the economic outlook**

The Ukrainian economy, as measured by GDP and CPI, has made dramatic progress since the dark days of recession at the end of the 1990s. It also exhibits high volatility. The table above summarises the recent years’ progress and near-term forecasts of the IMF.

Undoubtedly the reform programme, however slow, has made some significant difference. Nonetheless it is hard to explain the surge in GDP recorded in 2004 (as the oil price surged also). The components of GDP (according to the World Bank) show a gradual increase in the proportion of GDP represented by personal consumption from 48% in 1993 to over 60% in 2003 (latest data). That and the growth in per capita income for 2003 of over 10% would certainly go some way to explain the remarkable GDP growth.

But whatever the explanation, an economy dependent on 80% imports for its energy needs is bound to feel the pain of recent hikes in the oil price. Almost 50% of electricity production is driven by fossil fuels and consumption of those (both oil and natural gas) outstrips local production by a factor of about 4 (see next section).

## Outlook for Ukrainian Economy

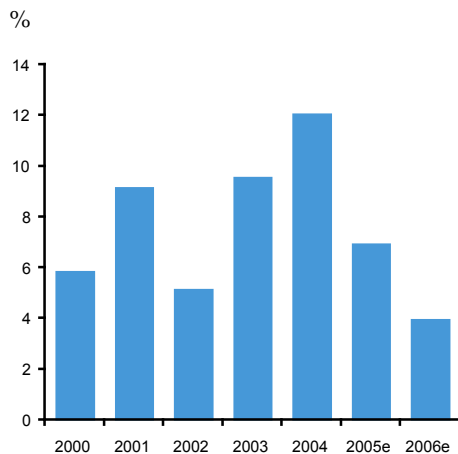
		2000	2001	2002	2003	2004	2005e	2006e
Ukraine	Real GDP	5.9	9.2	5.2	9.6	12.1	7.0	4.0
	Inflation <sup>(2)</sup>	28.2	12.0	0.8	5.2	9.0	12.5	5.9
	<b>Nominal GDP</b>	<b>34.1</b>	<b>21.2</b>	<b>6.0</b>	<b>14.8</b>	<b>21.1</b>	<b>19.5</b>	<b>9.9</b>
CIS (1)	Real GDP	9.1	6.4	5.4	7.9	8.2	6.5	6.0
	Inflation <sup>(2)</sup>	24.6	20.3	13.8	12.0	10.3	11.4	8.8
	<b>Nominal GDP</b>	<b>33.7</b>	<b>26.7</b>	<b>19.2</b>	<b>19.9</b>	<b>18.5</b>	<b>17.9</b>	<b>14.8</b>

<sup>(1)</sup> Confederation of Independent States

<sup>(2)</sup> CPI

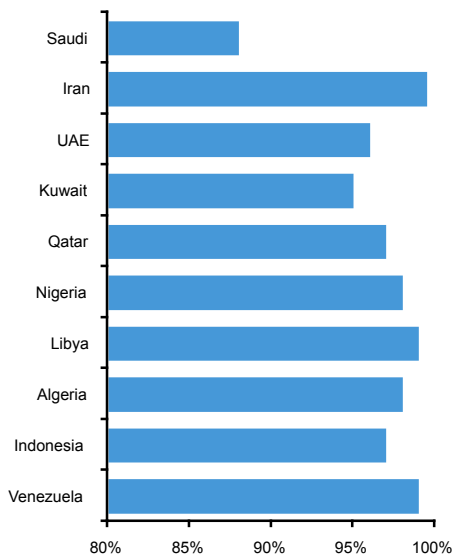
Source: IMF World Economic Outlook 2005

### Real GDP Growth



Source: IMF World Econ. Outlook 2005

### OPEC Capacity Utilization - Stretched



Source: Energy Information Admin.

Unsurprisingly the IMF forecasts are for a slowdown in the current year and again in 2006. Nonetheless real GDP growth in Ukraine has broadly matched or outstripped that of the CIS average in four of the last five years and is expected to do so again this year. But the clouds are gathering further out in the forecast period as a reminder of the need to reinvigorate the reform programme.

That of course comes back to the difficulty of managing personal expectations during a period of major economic transition. The official unemployment rate is some 3.5% although the ILO calculates a level closer to 10%. And it is in the area of managing expectations that recent policy decisions have raised questions.

As we mentioned earlier the decision to impose a cap on the oil price in April almost inevitably led to a shortage and public outcry. Equally the April decision to revalue upwards the currency against the USD (albeit by less than 5%) hit hard at a population which, on anecdotal evidence, holds its savings in USD. The explanation that the move was intended to bear down on double digit inflation was undoubtedly well-intentioned but provoked charges in public of "outright theft".

Nonetheless even the slower pace of reform has been reflected in a surge in industrial production to over 16% in 2004 – ranking 9th in the world and only 60bp behind that of China. Ukrainian industries are those traditionally associated with the legacy of a "smoke-stack" economy: coal, electric power, ferrous and nonferrous metals, machinery and transport equipment, chemicals and food processing (especially sugar).

The recent global rises in the price of raw materials has undoubtedly been helpful to most of these industry groups. However the European Commission has recently proposed reforms to open up its sugar markets. Those reforms, due to be published June 22nd, are widely expected to include deep cuts to the subsidies currently paid to growers. In its annual results presentation on June 2nd, Tate and Lyle warned that the changes, due to take effect in July 2006, would be expected to hit sugar refiners and that "sugar prices would inevitably come down". How that plays to an Ukrainian electorate remains to be seen.

Ukraine's major trading partners are Russia, Germany, Italy, China and Turkmenistan together representing over 50% of imports and 33% of exports. Russia remains the single largest trading partner at 18% of exports and 36% of imports. Evidently managing the political relationship with Russia is going to be another sensitive issue to be handled over the course of the economic transition including the ambition for Ukraine to join the EU.

Further complicating the picture is Ukraine's decision (in September 2003) to form the Single Economic Area (SEA) with Russia, Belarus and Kazakhstan. The SEA is an organisation intended to represent an increasingly free trade zone among its members. However implementation of the SEA is widely regarded outside the region to complicate Ukraine's stated intention of joining the WTO – never mind the EU.

### **Ukraine: the prospects for energy demand and supply**

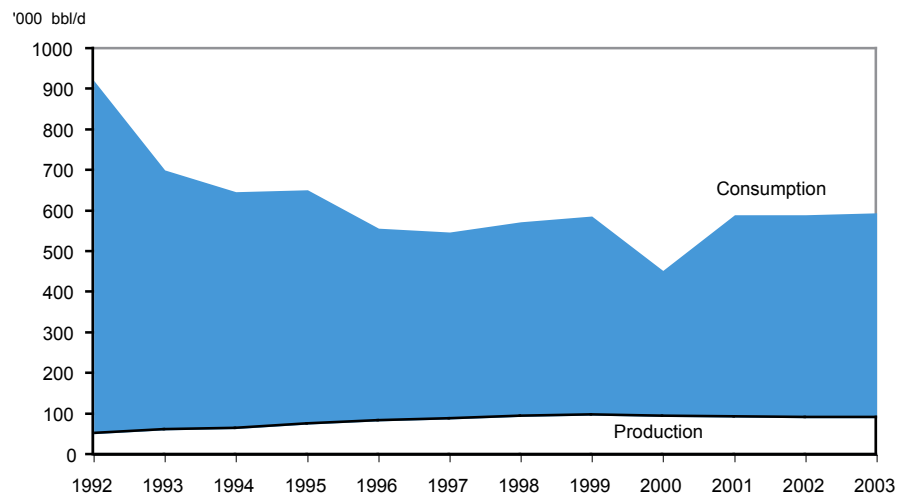
Ukraine is a net importer of some 80% of its total oil and other energy requirements. A significant proportion of that is supplied by Russia. It has the second largest gas pipeline network (36,700km) after Russia, delivering gas to domestic customers and most of the Russian gas export to other European countries. It also has some 4,520km of oil pipeline delivering exports from Russia and Kazakhstan to the Ukrainian refineries and also exported to Central European countries. Evidently Ukraine is of huge strategic significance in the region, including to Russia. In 2003 Ukrainian electricity production was some 180TWh (*source: CIA World Factbook 2005*) of which it consumed 132TWh. That total consumption ranks it 21st in the world between Sweden and Saudi Arabia. The sources which fuel that production are: fossil fuels (48.6%); nuclear (43.5%); and hydro (7.9%).

Putting to one side the nuclear generation (but see earlier section) the fossil fuel component comprises oil and natural gas. Here is where the major dependency lies. Oil production is some 72,000 bbl/day (2003 est.) but consumption is 303,000 bbl/day; proven reserves represent some 3.5 years of current consumption rates. Natural gas production is around 20bn cu m but consumption is around 80bn cu m. Proven reserves represent about 7 years of current consumption rates. For both fuel sources, consumption outstrips production by a factor of 4 (*Source for data is CIA World Factbook 2005*).

### **Ukrainian Oil Production and Consumption**

That situation is likely to become worse as the Ukrainian economy makes the transition from manufacturing to service industries and turns its face increasingly to the West. To get some idea of the possible scale of the future problem we take the example of the United Kingdom in the period 1970 to 2003. In that time manufacturing was structurally reduced to less than 20% of GDP. The drivers of economic growth increasingly became consumption and the service sector more generally.

## Ukrainian Oil and Production Consumption



Source: Energy Information Agency

At the start of the period, when the country still had a significant manufacturing base including coal and steel production, total electricity consumption was TWh192 (source DTI). By 2003, by which time manufacturing had fallen to represent less than 20% of GDP, consumption had risen to almost 340Twh, an approximate 1.7% annual growth rate.

That growth rate in electricity consumption is somewhat below trend growth estimates for GDP which have risen slowly from around 2% towards 3% more recently. That “slippage” represents to some degree the use of other energy sources but perhaps most significantly the shift from an industrial to a service-based economy.

We expect trend growth for the Ukrainian economy to be higher than that of the UK, at least in the early years. But to be conservative let us imagine that over the next 30 years electricity demand growth compounds at 2% per annum. That implies an 80% increase, taking Ukrainian electricity consumption to some 240TWh.

Assuming a similar split of generation between fossil fuels and nuclear as now that would in turn imply oil consumption of almost 550m bpd and natural gas consumption of some 150bn cu m. Given only 3.5 years equivalent of proven reserves of oil and 7 years of natural gas, at current consumption rates, the reliance on external supplies or exploration is set to rise dramatically.

Against that stark background and the regional political issues it would appear that any opportunity to develop domestic production would give greater and much needed independence to Ukraine. It would do no harm either to its ambitions for joining the western clubs or to its evident need to attract external capital.

The need to develop domestic production should inevitably lead also to rising domestic prices for natural gas and a closing of the gap with those achieved internationally. Local achieved prices for natural gas have risen from around US\$1 per Mcf in 1998 to around US\$1.90 in Feb 2004. Over the same period gas prices in Europe rose from some US\$1.80 per Mcf to over US\$6 per Mcf. The disparity is enormous and it would be naive to imagine the gap closing rapidly given the political and social implications of such a move.

But we expect that the domestic demand pull, the need to reduce dependency and the political ambition to more greatly integrate with Western, demand led, economies will inevitably lead to the gap closing over time. For external investors that implies rising demand for domestic production and pricing that comes more closely to reflect the currently 3x higher level achieved internationally. A heady combination albeit with all of the attendant risks.

### **Ukraine: Implications of the votes against the EU constitution**

The French and Dutch people have recently voted resoundingly against the proposed EU constitution. The implications we believe are profound both within the EU and beyond.

The legal significance of the recent referendums is disputed. However, if the EU cannot establish a common, single constitution it raises questions over the European ideal and with that the membership of the EU and indeed the very structure of monetary union. The euro weakened on the news of the votes.

Such visions are apocalyptic and low probability in our opinion. But the very fact that they are even considered raises a nightmare scenario for Ukraine. An increasingly hostile Russia to the East and a fragmenting European Union to the West. The nightmare, however small in probability, is a further element in the assessment of the country risk premium. But it is also a further driver towards increasing self-reliance in energy supply.

# Properties

Cardinal has interests in two producing properties: a gasfield at Rudivsko-Chernozavodske (the “RC Field”) in the east of the country and an oil field at Bytkiv-Babchenske (the “Bytkiv Field”) in the west.

Cardinal’s strategy is to develop these properties by a combination of expanded drilling and workovers using Western drilling equipment, practices and technology. Cardinal plans to use high quality control standards for casing cement, western drill bits and mud systems for faster drilling, along with modern logging tools. The project may also involve upgrading locally sourced rigs using Western technology to improve drilling efficiency. This is expected to decrease drilling time from 18 months to 8 months on a typical well at the RC Field.

## Cardinal Resources technology

### Current Problems

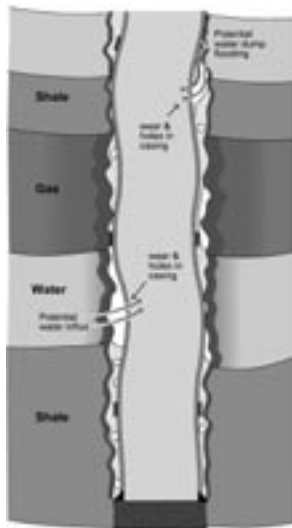
Poor cement integrity

- voids
- channeling

Wear on casing

- dump flood
- water influx
- collapsed casing

Increased drill time

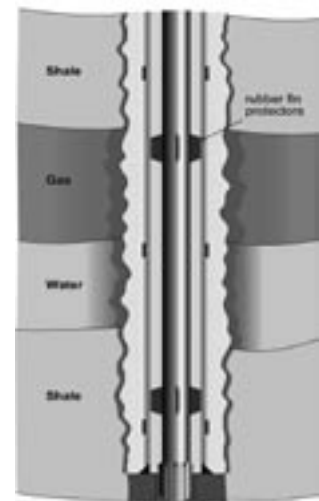


### Cardinal Solution

Improved integrity

- Reduced wear
- casing
- drill string

Reduced drill time



Source: Company

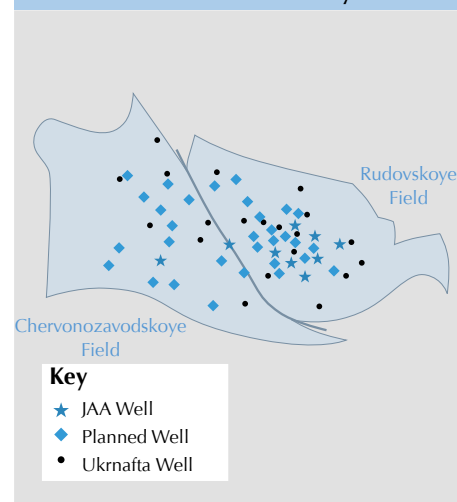
## 1. Rudovsko-Chervonozavodsky Gasfield Field (RC Field)

The RC Field lies some 200 km east of Kiev in the Dneiper-Donestk basin in eastern Ukraine. This area lies in a region known to be the largest hydrocarbon producing area in the country. The RC Field is estimated to have had initial gas reserves originally in place of 1.54 Tscf and 34.03 MMbbl of condensate with approximately 67% classified as P1 reserves (Source: ECL Scott Pickford).

Cardinal holds its interests in the RC Field via a Joint Activity Agreement with Ukrnafta who have been granted a 20-year production license valid until 2024 for the field. Cardinal currently holds a 16.6% Working Interest (“WI”) and 14.9% Net Profit Interest (“NPI”) in the RC Field. Cardinal has the right to increase its WI and NI to 50% and 45% respectively upon the payment of a negotiated amount to its partner Ukrnafta. While it is not certain what this amount might be, a net figure of around US\$6.5m has historically been discussed.

Currently there are six producing wells and Cardinal plans to increase this to 35 by 2011 at an expected average cost of US\$3.7 million per well. At 14.91% NPI, Cardinal’s net share of the RC Field’s production is expected to reach a peak of over 21 MMscfd (million standard cubic feet of gas per day) in 2011. Its current net production is 2.7 MMscfd natural gas and 26 bcpd oil.

## Rudovsko-Chervonozavodsky Gasfield



### Performance of previous JAA wells

Well	Date on Stream	Initial Well Rate MMscf/d	Comment
100	3/1/01	0.00	Waiting on workover
102	13/5/99	6.85	Current product rate is 1.95 MMscf/d
104	8/2/03	3.41	Current product rate is 1.93 MMscf/d
106	6/8/98	7.20	Current product rate is 4.32 MMscf/d
109	24/3/99	8.04	Failed on Feb-01. Waiting on workover
111	22/8/00	5.39	Failed on Apr-02. Waiting redrill
112	27/8/01	7.95	Current product rate is 7.7 MMscf/d
114	17/10/01	1.25	Current product rate is 0.9 MMscf/d
121	22/11/02	3.75	Current product rate is 2.15 MMscf/d

### Cardinal's Interest in RC Reserves\*

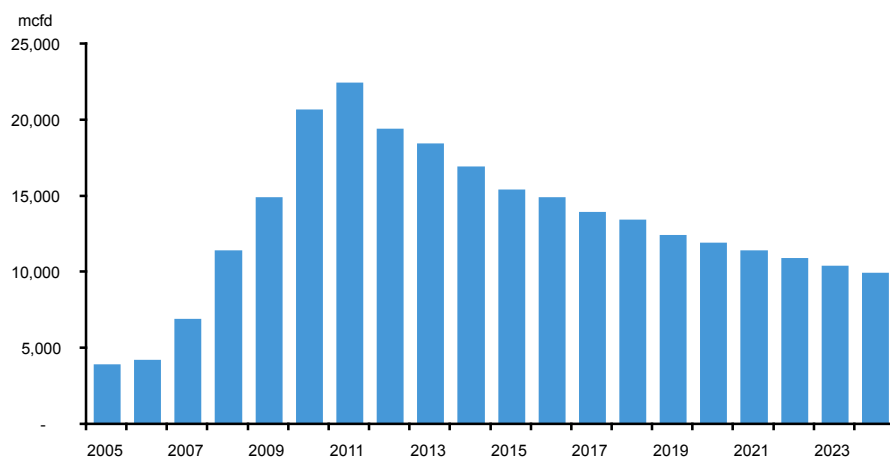
Net Reserves	Gas (Bscf)	Condensate (MMbbl)	Total (MMboe)
- Proven	60.0	0.9	10.9
- Probably	29.4	0.4	5.3
<b>Total</b>	<b>89.4</b>	<b>1.3</b>	<b>16.2</b>

Net Current Production	2.7 MMscfd	26 bopd
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\* 14.91% Net profit interest

Source: ECL Scott Pickford

### RC Field Forecast Gas Production attributable to Cardinal

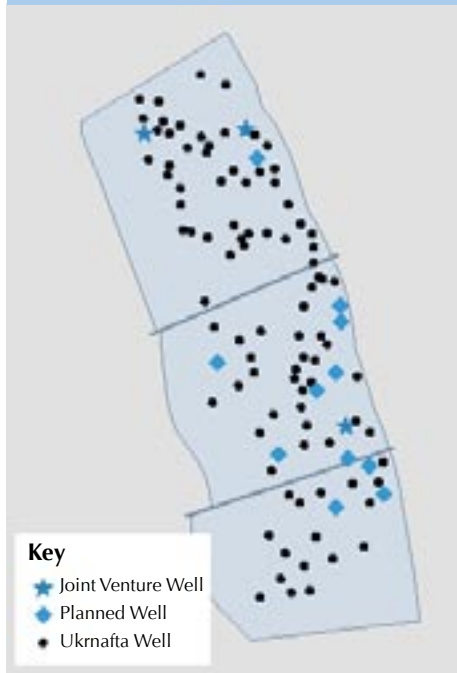


Source: Cardinal Resources

### Development plan for Bytkiv Field

Year	New Wells	Work Overs
2005	4	2
2006	1	0
2007	8	0
2008	7	0
2009	9	0
2010	6	0
<b>Total</b>	<b>35</b>	<b>2</b>

## Cardinal Resources Bitkov Field



## 2. Bytkiv-Babchenske Field

The Bytkiv Field lies in southwestern Ukraine in an area of numerous oilfields some 45 km southwest of the city of Ivano-Frankivsk. The Bytkiv Field is estimated to have had initial gas reserves of 521.5 Bscf and 593 MMbbl of oil originally in place with over 90% classified as P1 reserves (Source: ECL Scott Pickford).

Cardinal's UkrCarpatOil joint venture with Uknafta holds a 20 year production license until 2015 for the field. Currently 13 out of a total of 191 wells in the Bytkiv Field are covered by the JV although UkrCarpatOil has the right to take over the operation of any of the remaining wells should they wish to increase production. Cardinal currently holds a 56%\* WI and 45% NPI of the JV.

During 2005 – 2008, the joint venture plans to drill 10 new vertical wells and two new horizontal wells at an estimated development cost of US\$1.4 million and US\$1.6 million per well respectively. Cardinal's share of the Bytkiv field development programme is estimated to be US\$8.4 million. Cardinal expect the Bytkiv field to reach peak production in 2007 with an estimated oil output of over 500 bpd.

### Cardinal's Interest in Bytkiv Field\*

	Gas (Bscf)	Oil (MMbbl)
Net Proven & Probable Reserves	3.1	1.7
Current Production	0.4 MMscfd	127 bopd

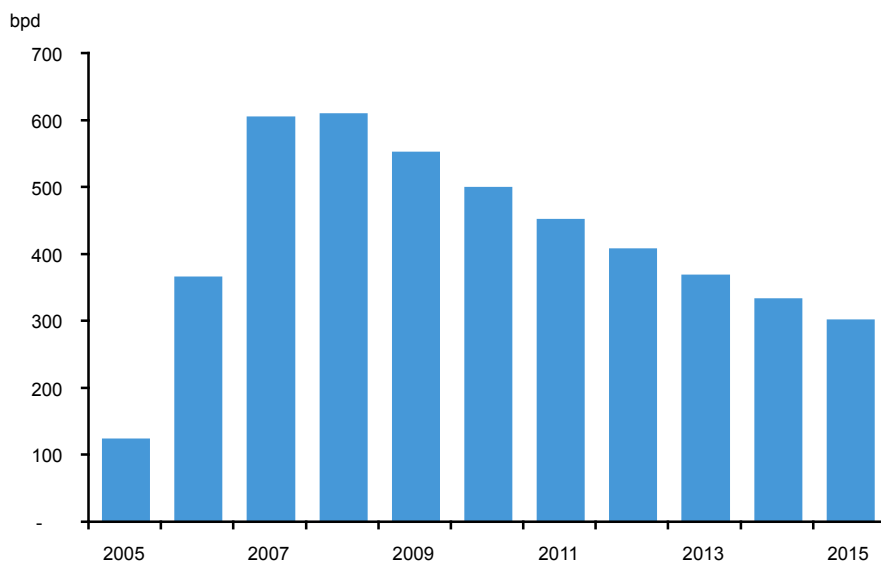
\* 45% Net profit interest

Source: ECL Scott Pickford

### Development plan for Bytkiv Field

Year	New Wells	Work Overs
2005	2	3
2006	6	9
2007	4	0
<b>Total</b>	<b>12</b>	<b>12</b>

### Bytkiv Field Forecast Oil Production attributable to Cardinal



Source: ECL Scott Pickford

## 1. Historic

Cardinal has a relatively short operational history and its past financial performance does not provide an insight into the Company's future earnings potential. The Company currently has interests in 9 wells in the RC Field (6 active and 3 shut-in with 2 of them awaiting workover and one to be re-drilled) and another 13 in Bytkiv Field. Following the expansion, Cardinal is expected to increase the number of producing wells from 6 to 43 (6 current plus 2 workovers plus 35 new development wells) in the RC Field and from 13 to 25 (13 current plus 12 new development locations in the Bytkiv Field. As such, its scale of operation and the financial performance will change considerably from 2005 onwards.

### Financials - Audited Final Results

US\$000's	Balance Sheet:		
As at December 31,	2003	2002	2001
Cash	360	397	379
Other Current Assets	491	488	437
Oil & Gas Assets	3,524	3,565	3,992
Total Assets	4,375	4,450	4,808
Current Liabilities	4,167	3,918	3,664
Long term debt	0	0	0
Provision for liabilities and charges	171	157	144
Other Liabilities	0	0	0
Total Long Term Liabilities	0	0	0
Shareholders' Equity	37	375	1,000
Total Liabilities & Equity	4,375	4,450	4,808

### Statement of Income/(Loss):

Year Ending December 31	2003	2002	2001
Operating Income	465	516	441
General & Administrative Expense	(656)	(808)	(1,900)
Tax Expenses	(241)	(279)	(426)
Interest payable	(149)	(151)	(107)
Net Income (Loss)	(338)	(625)	(1,831)

### Statement of Cashflows

Year Ending December 31	2003	2002	2001
Operating Cash Flow	473	576	320
Capital Expenditures	(164)	(263)	(53)
Working Capital Changes	(339)	(192)	(478)
Free Cash Flow	(30)	121	(211)
Equity Financing	0	0	108
Debt Financing	(7)	(103)	195
Change in Cash	(37)	18	92

Source: Company and Consultant

Based on the audited financial statements for the last three years (Grant Thornton UK LLP), Cardinal's profitability has been impaired by high interest charges largely related to short-term debt used to finance its working capital. During 2003, Cardinal was able to report a gross profit of US\$465,000 at a gross margin of 32%. After interest costs of US\$149,000 and other expenses, Cardinal reported a loss of US\$97,000. The Company has been essentially in a stand-still position for the past three years.

## 2. Projections

Set out below is our analysis of projected financial statements for a three-year period (2005 – 2007). Following the expansion, total revenue is expected to reach US\$5.3 million in 2005. This is expected to rise 94% to US\$10.3 million in 2006 and 57% to US\$16.2 million in 2007. Contribution from oil revenue is expected to be higher during the first two years, but is likely to be eclipsed by higher gas revenues from the third year onwards due to more gas resources in Cardinal fields.

### Financials - Full year results (forecast)

US\$000's As at December 31,	<b>Balance Sheet:</b>				
	<b>2004F</b>	<b>2005F</b>	<b>2006F</b>	<b>2007F</b>	<b>2008F</b>
Cash	0	10,725	6,197	3,920	6,728
Other Current Assets	1,011	1,127	2,341	1,981	2,587
Oil & Gas Properties	3,084	4,983	9,553	14,722	18,398
Other Assets	298	311	273	285	268
Total Assets	4,393	17,146	18,364	20,908	27,981
Current Liabilities	5,143	2,024	2,258	1,848	4,478
Long Term Debt	0	0	0	0	0
Provision for Liabilities and Charges	127	168	222	256	312
Other Liabilities	0	130	130	130	130
Total Long Term Liabilities	127	372	352	386	442
Shareholders' Equity	(877)	14,750	15,754	18,674	23,061
Total Liabilities & Equity	4,393	17,146	18,364	20,908	27,981

Year Ending December 31	<b>Statement of Income/(Loss):</b>				
	<b>2004F</b>	<b>2005F</b>	<b>2006F</b>	<b>2007F</b>	<b>2008F</b>
Operating Income	972	2,826	5,061	8,563	10,569
General & Administrative Expense	(1,293)	(4,554)	(2,630)	(2,709)	(2,790)
DD&A	(440)	(403)	(697)	(1,529)	(1,819)
Tax Expenses	(153)	(242)	(730)	(1,405)	(1,573)
Net Income (Loss)	(914)	(2,373)	1,004	2,920	4,387

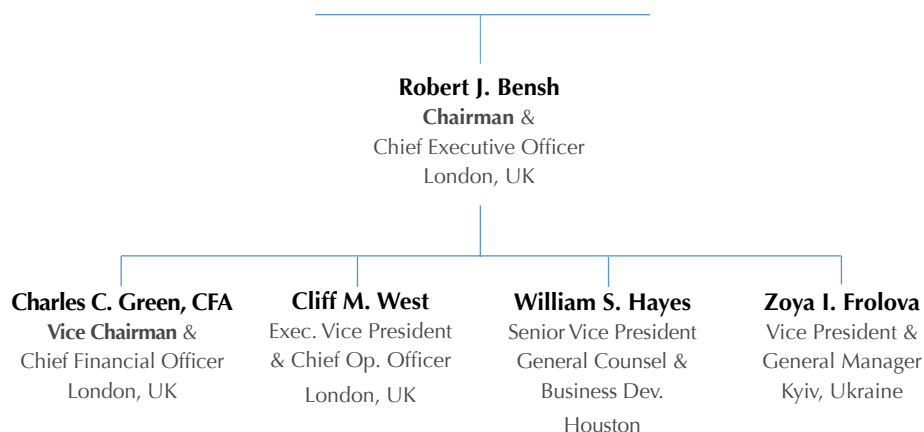
Year Ending December 31	<b>Statement of Cashflows</b>				
	<b>2004F</b>	<b>2005F</b>	<b>2006F</b>	<b>2007F</b>	<b>2008F</b>
Net Income	(914)	(2,373)	1,004	2,920	4,387
DD&A	440	403	697	1,529	1,819
Change in WC & Other Adjustments	0	(3,003)	1,448	(770)	3,236
Cash Flow from Operations	(474)	(4,973)	3,149	3,679	9,442
Capital Expenditures	0	(2,302)	(7,677)	(5,956)	(6,634)
Free Cash Flow	(474)	(7,275)	(4,529)	(2,277)	2,808
Equity Financing	0	18,000	0	0	0
Debt Financing	0	0	0	0	0
Change in Cash	(474)	10,725	(4,529)	(2,277)	2,808

Source: Company and Consultant

Cardinal's operations are expected to be helped by the funds generated from its capital raising, thus immediately improving its working capital. Increased scale of operations and consequent synergies are expected to boost its operating margins to 33.5%. Shareholders' equity is expected to increase to US\$21 million and reach US\$27 million by the end of year 3. Despite this increase, Return on Equity (ROE) and Return on Assets (ROA) are expected to reach an impressive 17% and 15% respectively.

Robert J. Bensch  
Jonathan C.R. Morley-Kirk, FCA  
Andrew Seton

Charles C. Green, CFA  
David F. Phillips  
Marcus J.G. Stanton, FCA



## Board Members

### Robert J. Bensch, Chairman, Chief Executive Officer, and Director

Mr. Bensch has been Chairman and Chief Executive Officer of Cardinal since February 2004 and Carpatsky since December 2000. Prior to his appointment as CEO, Mr. Bensch was Carpatsky's Executive Vice President and the COO. From September 1997 to December 2000, Mr. Bensch was Vice President capital markets, Senior Vice President, CFO and Corporate Secretary of Bellwether Exploration Company.

### Charles C. Green – Vice Chairman, Chief Financial Officer, and Director

Mr. Green is a Chartered Financial Analyst and holds MBA and BBA degrees from the University of Texas, Austin. Mr. Green has previously served as President and earlier CFO of Torch Energy Advisors Inc. Mr. Green also served as Executive Vice President and CFO and was a director of Bellwether Exploration Company (now Mission Resources Corp.).

### Jonathan C. R. Morley-Kirk, Director

Mr. Morley-Kirk is a Chartered Accountant and a member of the Society of Trust and Estate Practitioners, the Securities Institute and the Expert Witness Institute. Previously he was a director of S G Warburg Securities and Samuel Montagu & Co, both in London. Mr. Morley-Kirk has extensive experience of structuring and investing in emerging economies and is Chairman of FoxDavies Capital Limited, an FSA-regulated corporate finance boutique and the Company's broker.

### David F. Phillips, Director

Mr. Phillips has served on the Board of Carpatsky since 2000. He has also served as a director or corporate secretary of a number of other public companies. Mr. Phillips is a member of the Law Society of Alberta and a partner in the Calgary office of McCarthy Tetrault LLP, Canada's largest law firm (and Cardinal's solicitors).

### **Andrew Seton, Director**

Mr. Seton has over 20 years of experience in the City. Currently, he is Deputy Chairman of the Supervisory Board of Telekomunikacja Polska SA (“TPSA”), Poland’s leading telecoms company. From 1992-2002, Mr. Seton was Country Director for Ukraine for the European Bank for Reconstruction and Development (“EBRD”), resident in Kiev. During this time he was also a director of four Ukrainian-based companies in which the EBRD has made investments including Ukrainian International Airlines. From 1989-1997 Mr. Seton was a Main Board Director of Morgan Grenfell & Co. Limited (later Deutsche Morgan Grenfell), including Director with responsibility at various times for corporate and project finance in Eastern Europe/Former Soviet Union.

### **Marcus J. G. Stanton, Director**

Mr. Stanton is a Chartered Accountant with extensive experience in investment banking. He was a director of Robert Fleming & Co., from 1993-2000, where he was Chief Operating Officer of Capital Markets and Head of Structured Finance. Prior to this he was a director of Hill Samuel & Co.

## **Senior Management**

### **Cliff M. West, Executive Vice President and Chief Operating Officer**

Mr. West has been with the Company since April 2004. From November 1997-September 2001, Mr. West was Senior Vice President for Exploration and Production, a Senior Geophysicist, and a geophysical consultant for Bellwether Exploration Company (now Mission Resources Corporation). Previously he was an Exploration Consultant and Vice President of Norcen Explorer (USA). In November 1994, he became Vice President for Norcen Energy Resources Limited, the parent company of Norcen Explorer and served in various positions at the Vice President level associated with oil and gas exploration and production until June 1997.

### **William S. Hayes, Senior Vice President – General Counsel & Business Development and Company Secretary**

Mr. Hayes is a 1980 graduate of St. Mary’s University School of Law in San Antonio, Texas with a bachelor of law degree (juris doctor) and since then, has practiced in the oil and gas industry, first in the US domestic petroleum business and subsequent to 1989, in the international oil and gas industry with British Gas E&P and then in private practice.

### **Zoya I. Frolova – (Vice President & General Manager – Cardinal Ukraine)**

Ms. Frolova, a native of Ukraine, has been Vice President & General Manager of Cardinal Ukraine since December 2003, and was previously director of the representative office of Cardinal Ukraine from July 2000. Prior to her employment with Cardinal Ukraine, Ms. Frolova was a management consultant with PricewaterhouseCoopers working and living in several Eastern European countries. She graduated from the Technical University, Ukraine in 1999, with a degree in economics.

We are pleased to bring you this report on Cardinal Resources plc.



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Gabriel Didham, CFA  
Objective Capital

#### **Andy Hartwill – Head of Research**

Andy has more than 20 years experience including as UK & Global Strategist at SG Hambros, latterly Soc Gen Securities. Prior to this he was UK and European Strategist for Paribas, and Head of Research at Capital House and Spencer Thornton. He is a regularly guest on Bloomberg and CNBC.

#### **Sam Kiri, CFA**

Sam has more than 13 years of international analytical research experience with a primary focus on resources and energy companies. He has previously served with Scotiabank and W.I. Carr in the Far East.

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