

Experiences of shale development in the EU

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Lewino-1G2 shale frac results, Poland

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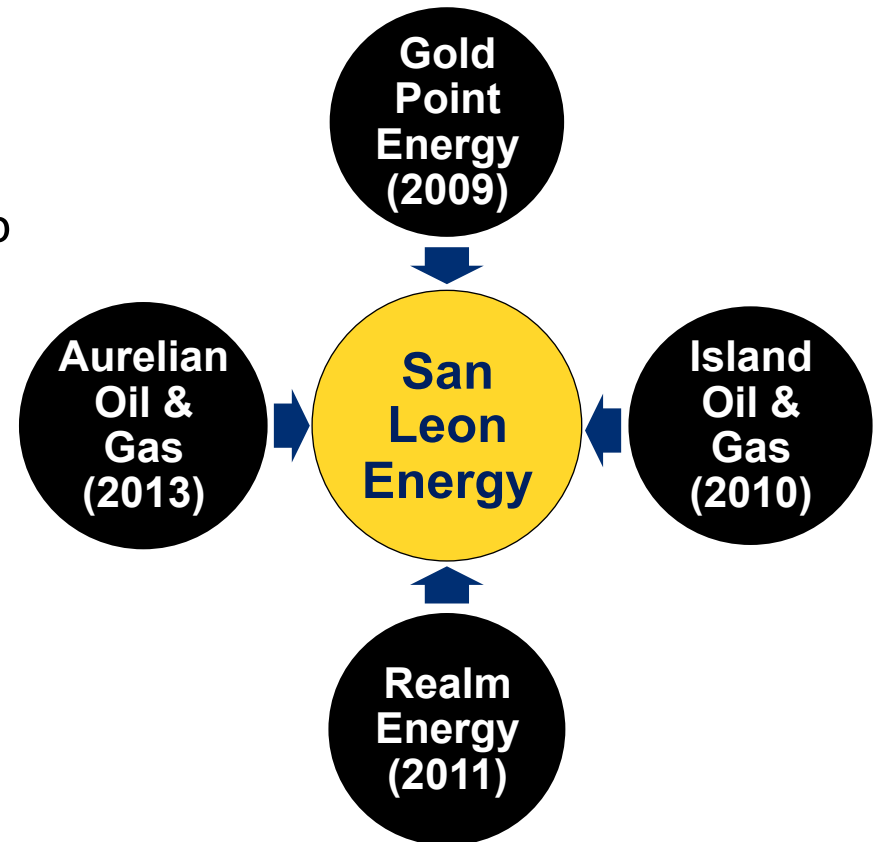
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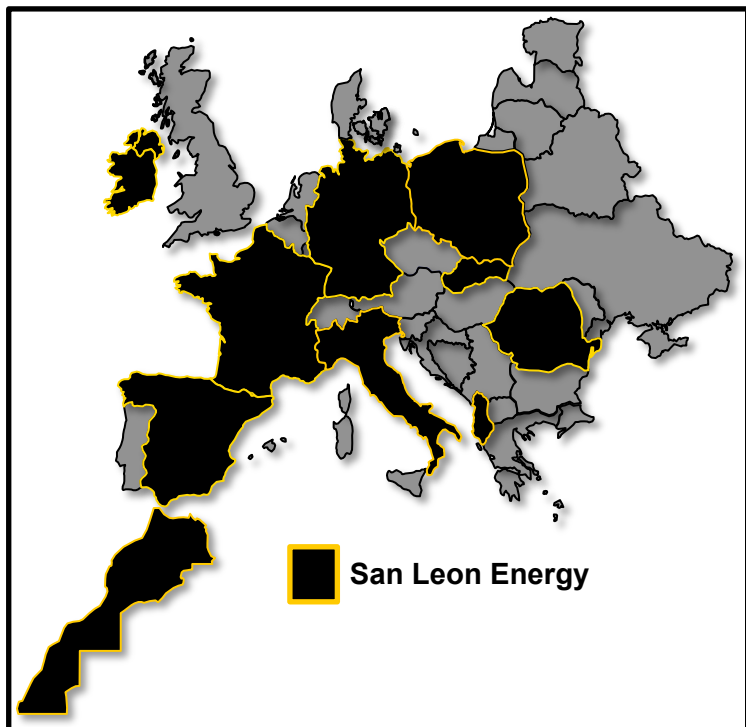
Company Overview

- **London listed independent exploration and near-term production company**
- **Europe & North Africa focussed**
 - High impact exploration in Poland and Morocco
 - Near-term Polish production
- **Extensive and balanced portfolio**
 - 83 licences with c.15 million net acres
 - Conventional and unconventional; oil and gas
- **Highly experienced management**
- **Applying proven technology**



San Leon Energy Plc

Asset Overview – Extensive Acreage Base



Core Areas	Gross		Net		Licences
	Country Name	Acres	Km ²	Acres	
Poland	6,842,453	27,690	4,911,451	19,876	42
Morocco	9,083,074	36,758	4,241,093	17,163	6
	15,925,526	64,449	9,152,544	37,039	48

Other Areas	Gross		Net		Licences
	Country Name	Acres	Km ²	Acres	
Albania	1,037,843	4,200	1,037,843	4,200	1
Ireland	981,009	3,970	126,047	510	7
Spain	704,497	2,851	704,497	2,851	4
Slovakia	603,431	2,442	301,716	1,221	3
Romania	358,303	1,450	179,151	725	1
Italy	177,471	718	177,471	718	2
Germany	15,568	63	15,568	63	1
	3,878,122	15,694	2,542,294	10,288	19

Total Licences	19,803,649	80,143	11,694,838	47,327	67
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Licences Under Application	Gross		Net		Licences
	Country Name	Acres	Km ²	Acres	
Spain	1,523,405	6,165	1,523,405	6,165	6
France	2,357,138	9,539	2,357,138	9,539	10
	3,880,543	15,704	3,880,543	15,704	16

Grand Total	23,684,192	95,847	15,575,381	63,031	83
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Main Takeaway – EU Shale Development

**There is no shale “development” in the EU...
yet**

Exploration

Appraisal

Development

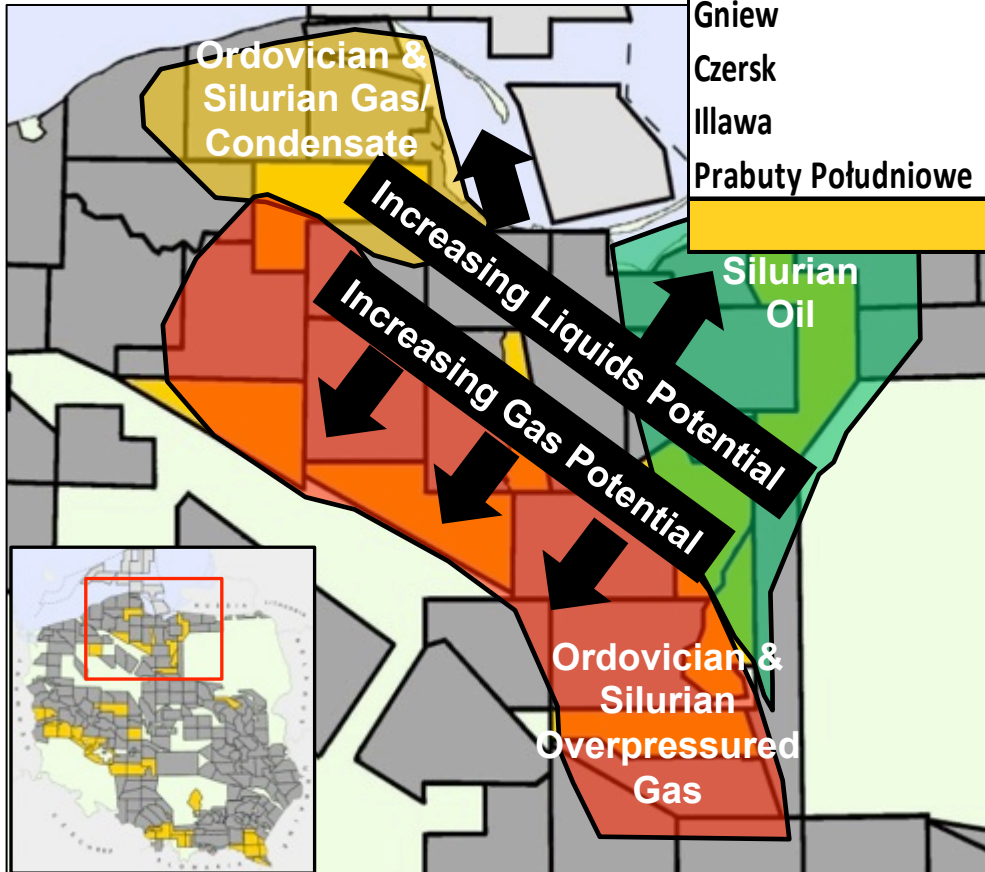
Increasing technical maturity and understanding, decreasing development risk

- Poland leads the way in EU shale exploration/appraisal
 - Current fracs and testing may prove commerciality this year
- UK has a single frac in Blackpool, and would be considered early appraisal

Poland – Baltic Basin, 146Tcfe ⁽¹⁾ Paleozoic Shale Play

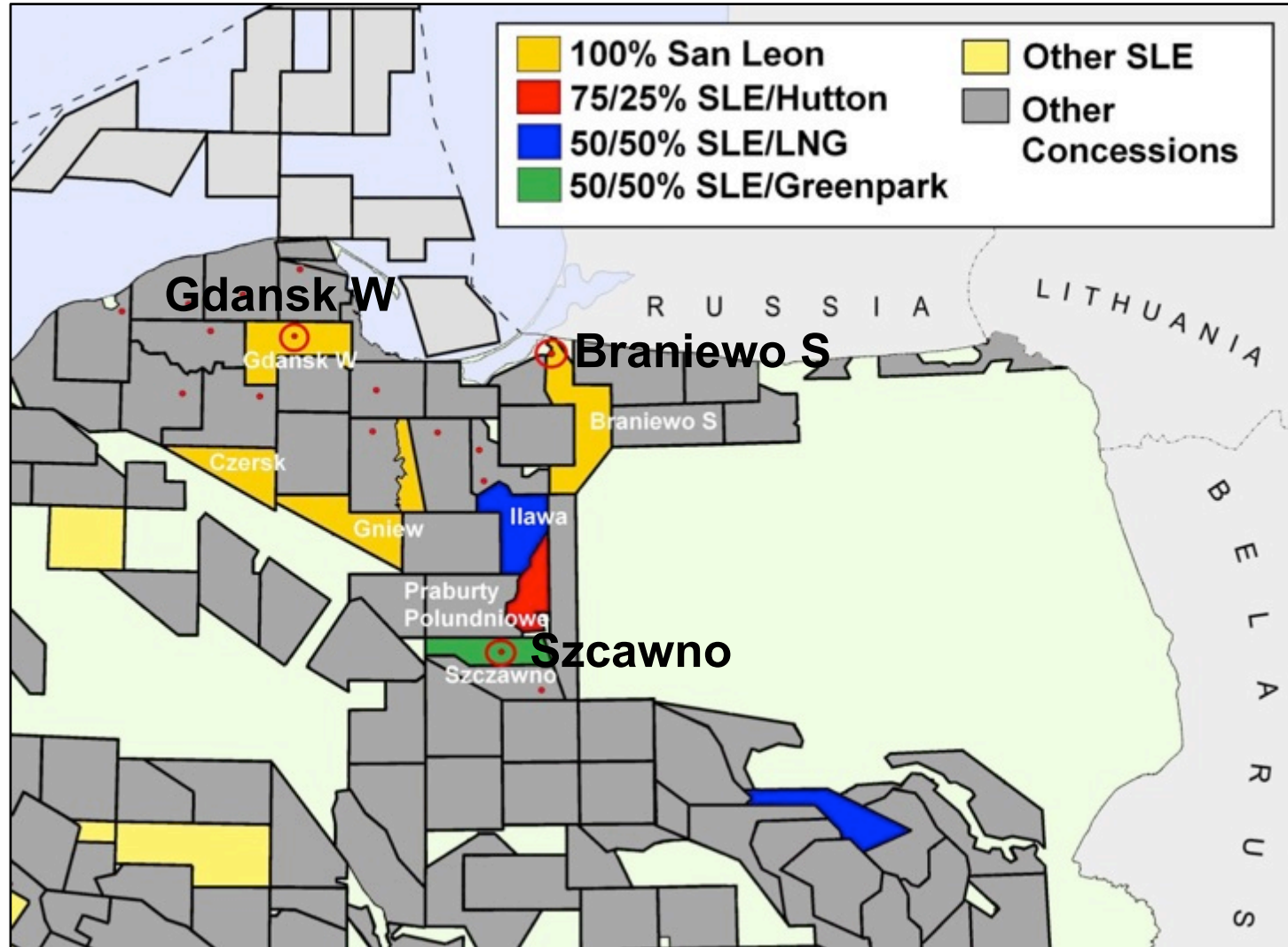


POLAND Basin	Gross		Net		WI
	Acres	KM ²	Acres	KM ²	
Gdansk W	221,014	894	221,014	894	100%
Braniewo S	257,654	1,043	257,654	1,043	100%
Szczawno	149,103	603	74,552	302	50%
Gniew	294,369	1,191	294,369	1,191	100%
Czersk	173,584	702	173,584	702	100%
Illawa	184,242	746	92,121	373	50%
Prabuty Południowe	118,611	481	88,958	361	75%
	1,398,577	5,661	1,202,252	4,866	



- **Material Baltic Basin acreage position across 7 licences**
- **Basin-wide diversity:**
Portfolio approach to acreage position:
 - Combination of gas & liquids, shallow & deep plays

Poland – Baltic Basin, San Leon Areas And Activity



Lewino-1G2 Overview (Gdansk W)



**Gdansk West
Gas In Place estimate:
12 – 18 Tcf
across >220,000 acres**

- Attractive combination of porosity, pressure, TOC (Total Organic Carbon), clay content and existing fractures

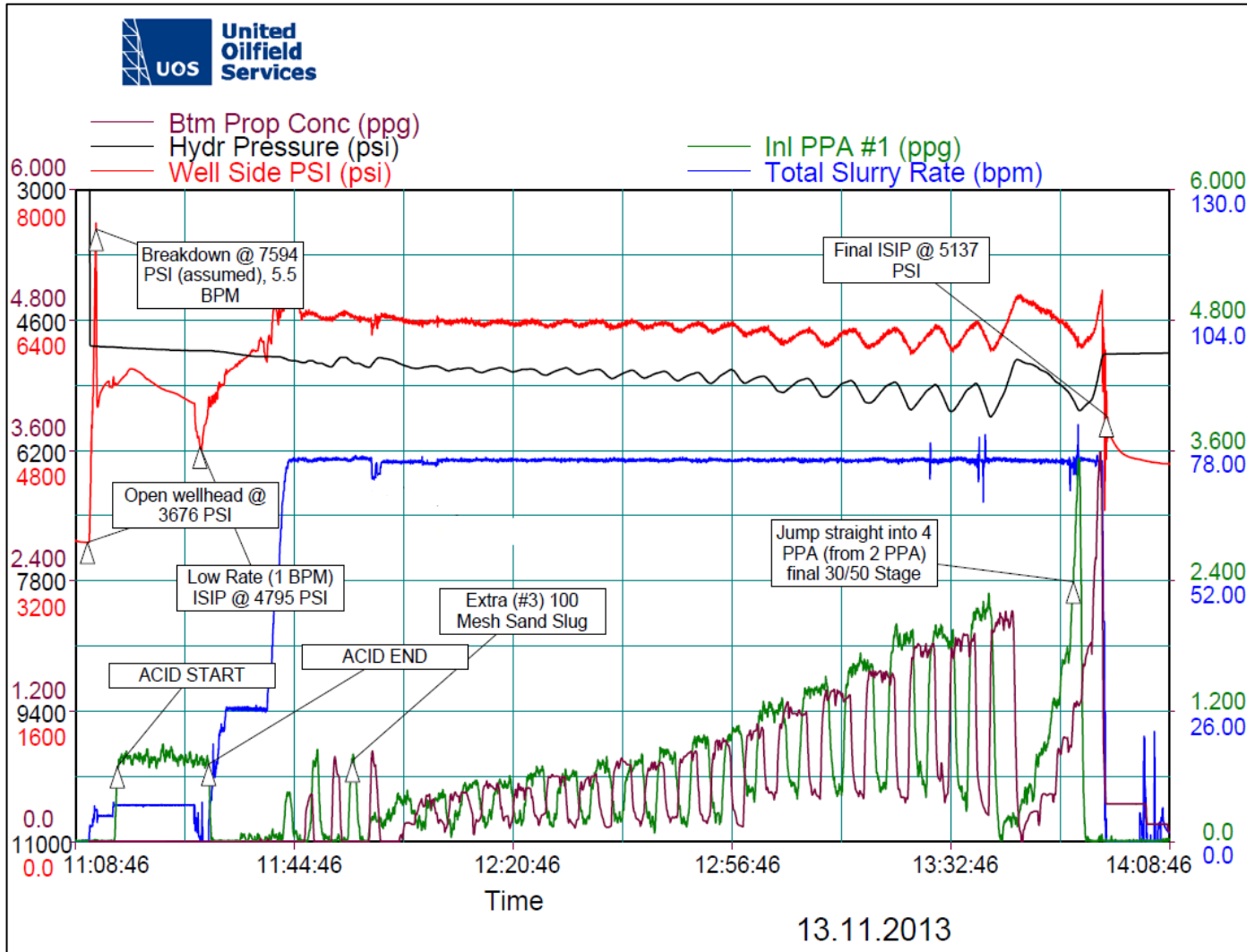
Lewino-1G2 Results



- Flowrate after 6 weeks was 45,000-60,000 scf/d

Estimated 200,000-400,000 scf/d potential, just from poorer part of shale (single frac)

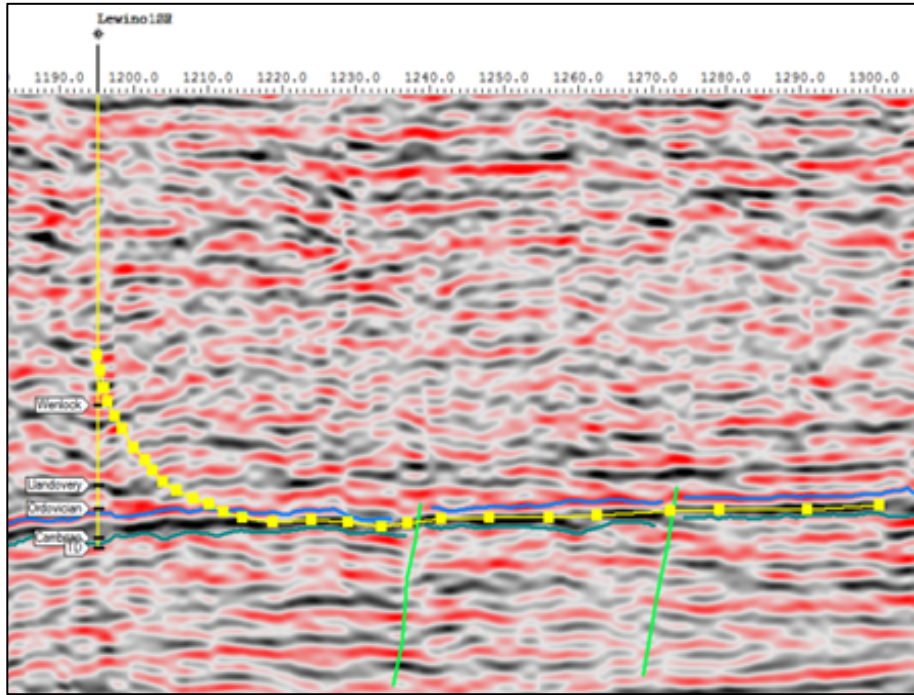
Lewino-1G2 Frac 3 Detail



- Fracs 1 & 2 enable significant learning and job design modifications for frac 3
- Frac 3 was a “textbook” frac: very stable pump graph
- Ease of pumping suggests plenty of scope for further optimisation

Complex design brings together geology, engineering and operations

Horizontal Aims To Prove Commerciality



- Horizontal (1500 m+) will now be drilled
- Multiple fracs
- Expected flowrate at least several million cubic feet per day (scf/d), which would prove commerciality

Then there would be EU shale development!



- Best vertical frac in European shale, by some way
- Demonstrates the two factors we wished to prove in this well:
 - We can place a successful frac, and keep it open for flow
 - The shale is capable of substantial, sustained flow rate
- Several other Operators in Poland are performing similar work this year
 - Anyone's success with a horizontal multi-frac well should lead to development

Operating In Poland



- A large majority of the population supports shale development in Poland
- In December 2013, the Prime Minister shuffled his Cabinet and Chief Geologist to ensure prioritisation of shale work
 - Bureaucratic processes now far quicker
 - Maintains environmental and planning rigour
- More than 70% of Polish gas is imported from Russia
 - Heavy reliance on coal too
- Local community also very supportive where we operate
 - We sponsor the local school, provide jobs, keep the community informed

Political and social will is supportive of shale in Poland – it's now up to the engineers and geologists to make it work technically