SGS INVESTOR DAYS 24 – 25 OCTOBER 2013 USA

SGS AND THE US ENERGY MARKET TRANSFORMATION

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Investor Days, 24-25 October 2013

WHEN YOU NEED TO BE SURE

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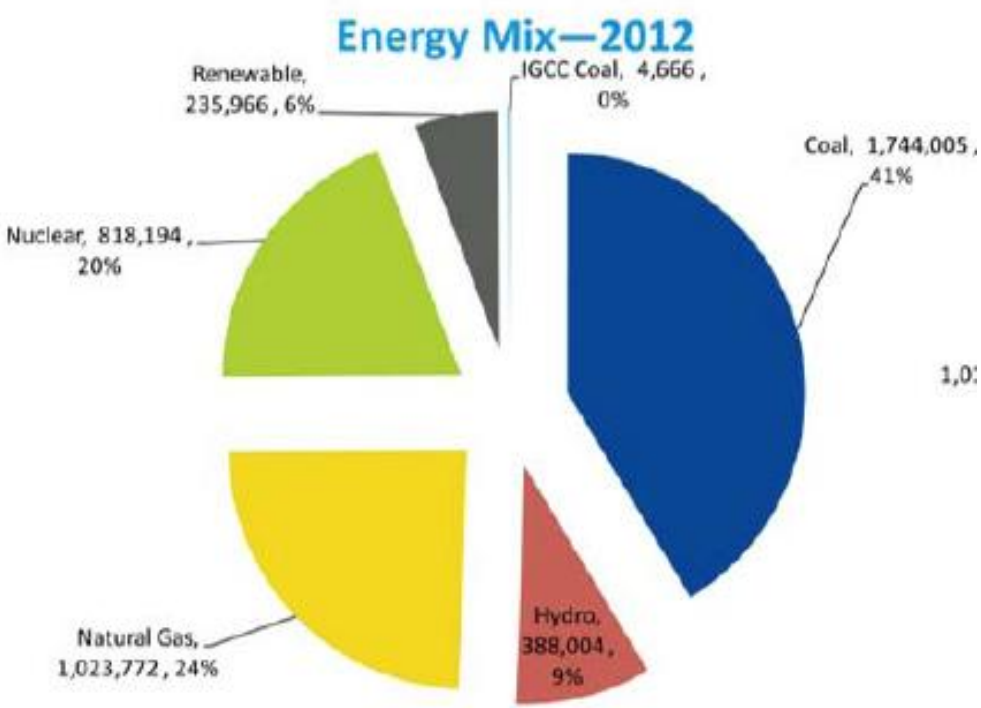
USA ENERGY MIX: CURRENT STATE



TRANSFORMATION DRIVERS:

- Shale Gas production – double impact of sharp volume boost and low price at the domestic market
- Increasing onshore shale oil production –moratorium on offshore drilling focusing players on onshore development
- Legislative and environmental pressure on coal – and distillate fuel oil firing utilities
- Energy Independence

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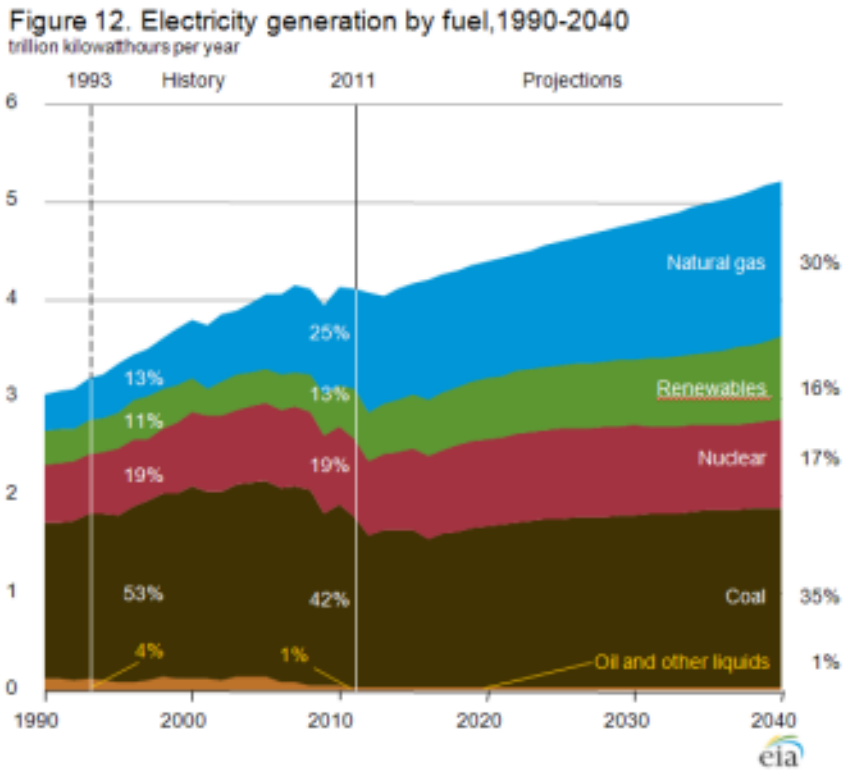
ENERGY MINERALS: DOMESTIC CONSUMPTION OUTLOOK



OVERALL

- Electrical generation from coal stabilizes ~ 35%
- Electrical generation from gas accelerates
- Renewable's share continues to grow
- US exports are viable to Europe, parts of the Far East

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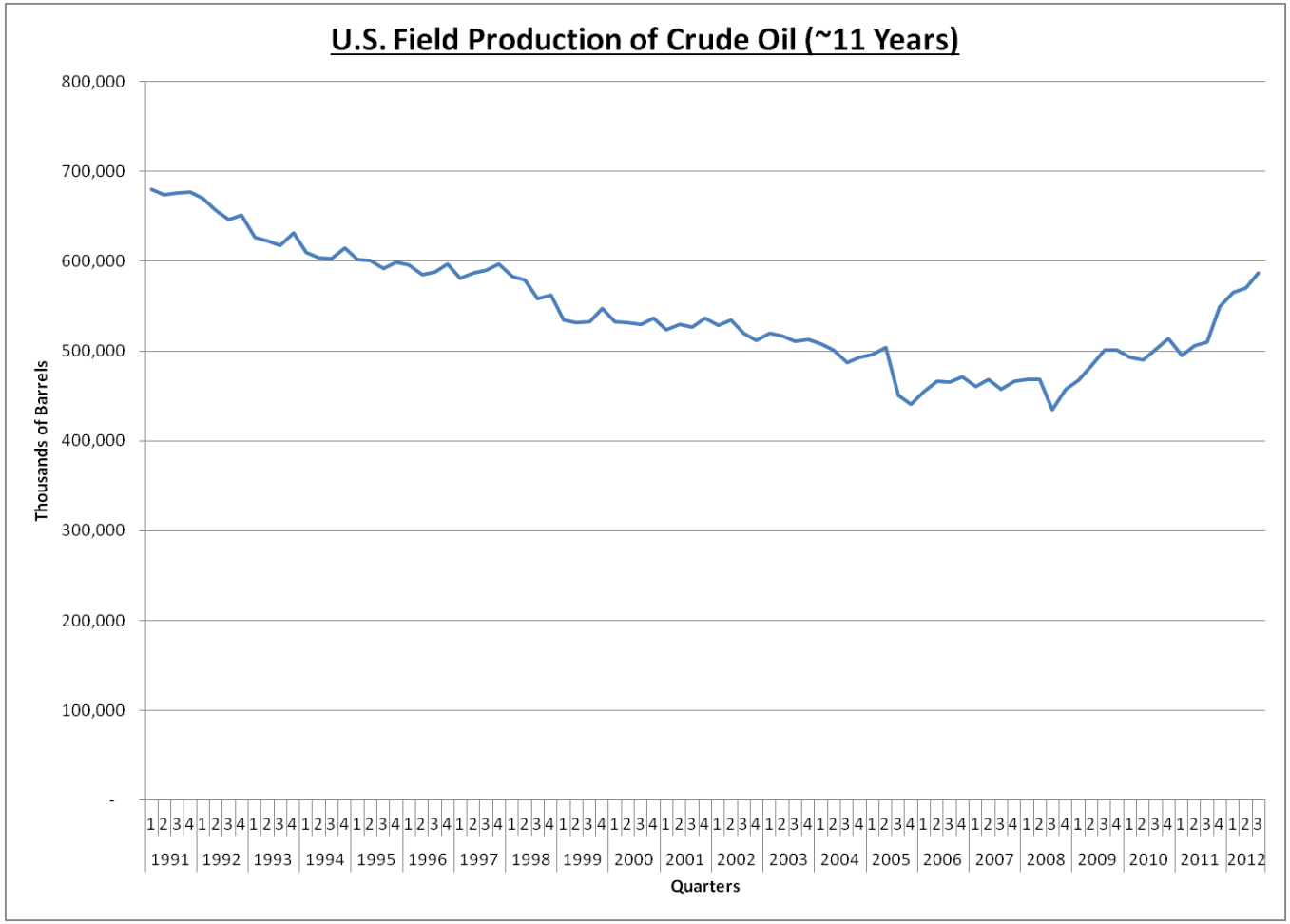
OIL AND GAS: DRIVERS

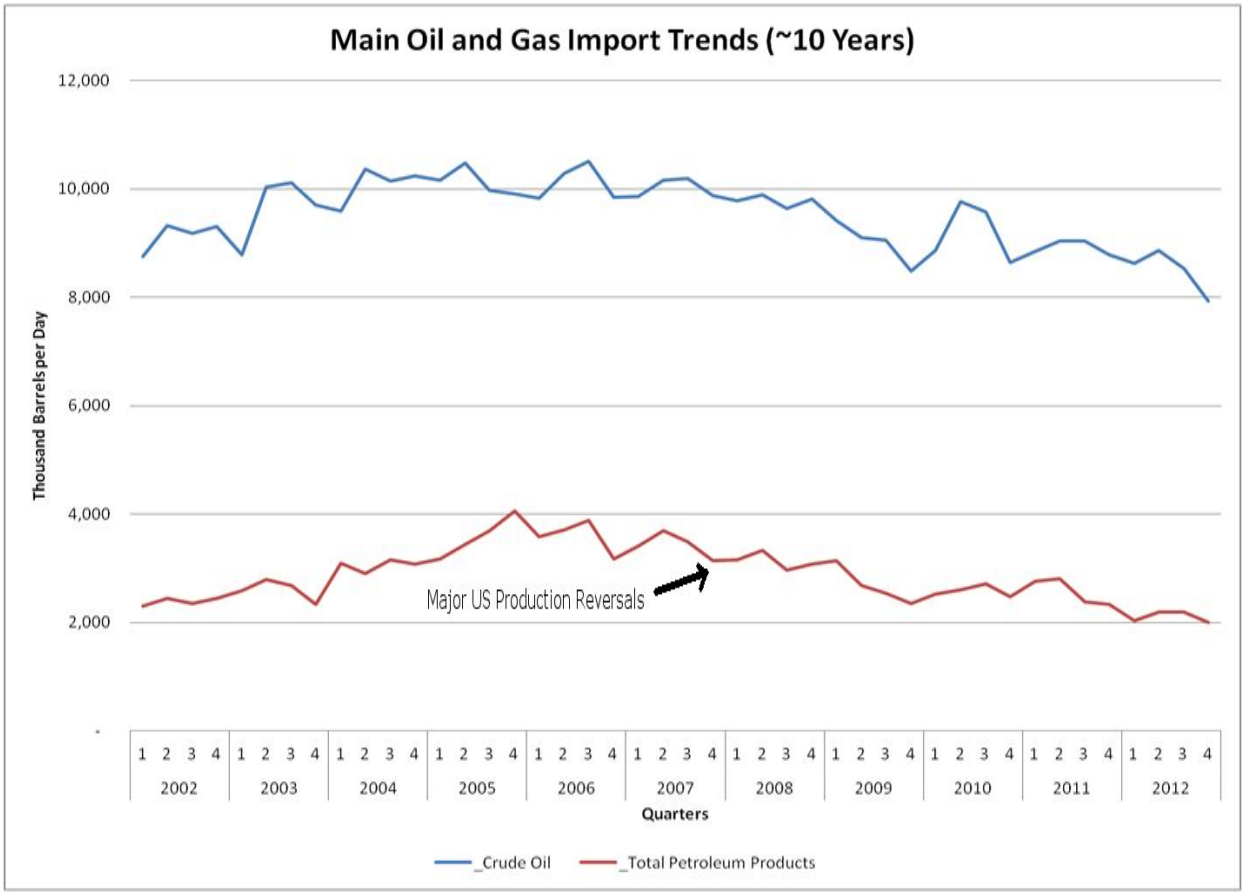
- Production vs. Consumption
  - Positive production trends due to the introduction of horizontal drilling and “fracking” technology to once unproductive oil wells
  - No significant change in the total consumption is expected
  - Stable consumption and growing production will lead to export growth.
- Imports vs. Exports
  - Crude oil export is limited by the regulations ⇨refineries to benefit from lower crude oil prices ⇨ petroleum products export increase
  - US exports more hydrocarbon products than imports in 2011
  - LNG exports to increase - but is highly dependent upon infrastructure and legislative developments over the next 5 years

OIL AND GAS: CRUDE OIL PRODUCTION



- Over the last 3 years US crude oil production has grown by 30%
- This growth is primarily from the utilization of new technologies such as hydraulic fracturing (fracking) and horizontal drilling in tight crude oil reserves
- Tight oil plays appear to be more than sufficient in replacing depleting conventional oil reserves in places such as Alaska and Texas

OIL AND GAS: US IMPORTS CHART



- Reversals of import trends correlate with the large boosts in US crude oil production
- All fuel products have seen a decrease in imports but the largest decrease has been with finished motor gasoline (-92.3%) and distillate fuel oils (-75%)

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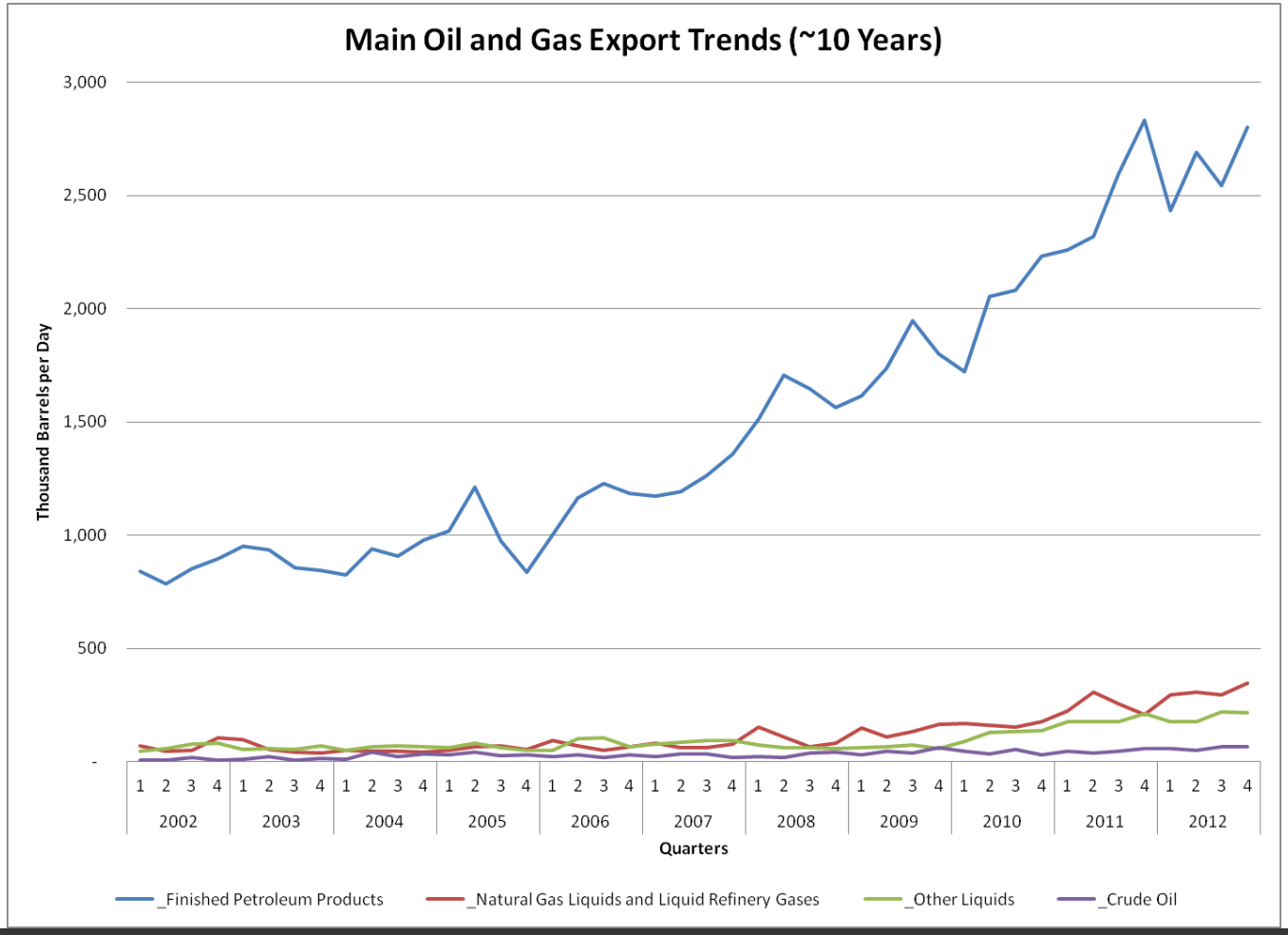
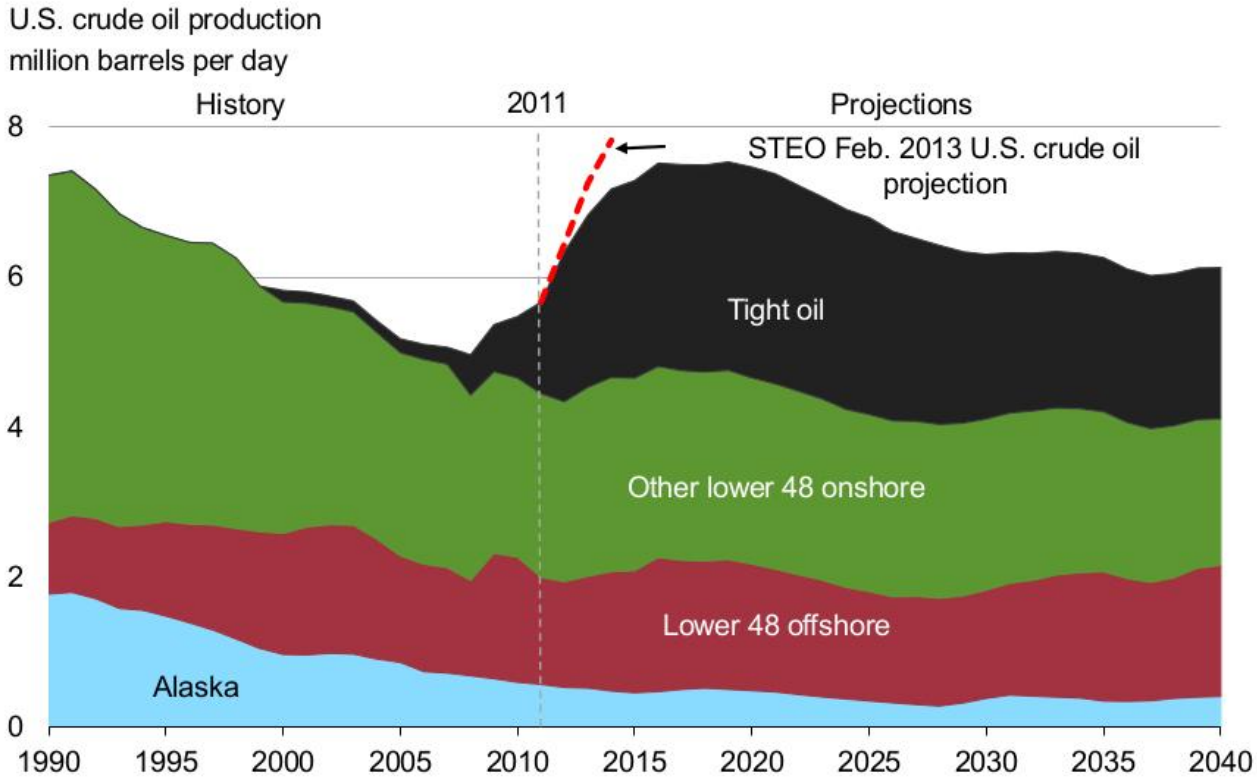
OIL AND GAS: US EXPORTS CHART



- Over the past decade finished petroleum product exports have increased more than 2.50 times
- Most of the export growth is due to an increase in demand for distillate fuel oils, but very respectable rates of growth for finished motor gasoline
- There is a high probability that there will be an increase in the export of Pentanes Plus in the coming decade, due in part to Canada's demand for diluents to transport their heavy Canadian bitumen to the Gulf Coast

OIL AND GAS:
CRUDE OIL PRODUCTION OUTLOOK

U.S. tight oil production leads a growth in domestic production of 2.6 million barrels per day between 2008 and 2019



Source: EIA, Annual Energy Outlook 2013 Early Release and Short-Term Energy Outlook, February 2013

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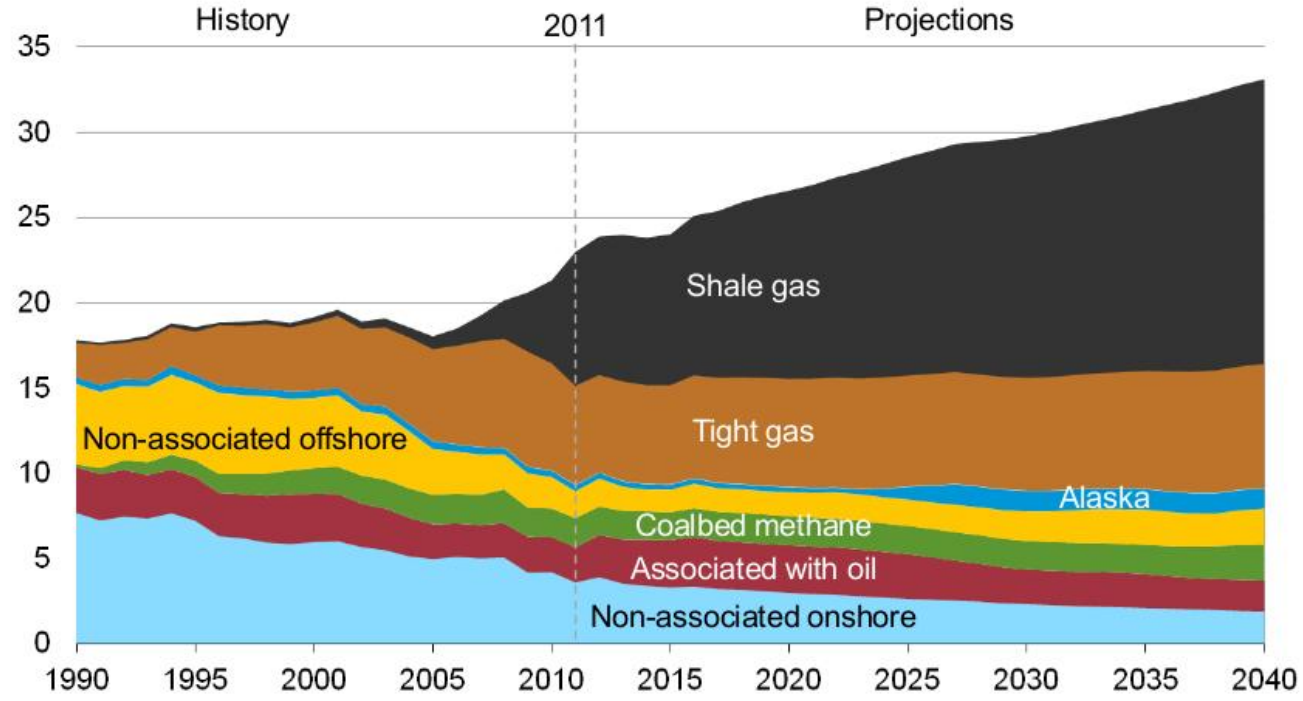
OIL AND GAS:
NATURAL GAS PRODUCTION OUTLOOK

Shale gas leads growth in total gas production through 2040

U.S. dry natural gas production
trillion cubic feet



Source: EIA, Annual Energy Outlook 2013 Early Release

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US ENERGY MARKET

	MINERALS SERVICES	OIL AND GAS SERVICES	INDUSTRIAL SERVICES
Network	~ 600 employees 13 commercial laboratories 29 on-site laboratories	~1700 employees 22 laboratories	~430 employees Materials testing laboratory, 18 mobile x-ray test rigs and ~260 field inspectors deployed around the country
2012 Revenues	CHF 59m	CHF 260m	CHF 53m
Market Share	45%	18% (Downstream Trade Related only)	14%
Competitors	1 nationwide competitor Many regional competitors	5 nationwide competitors (Downstream Trade Related only) Many regional competitors	3 nationwide competitors Many regional competitors
Revenue mix	Coal mining companies 60%	Plant and Terminal Operation Services 51%	Integrity NDE inspection 45%
		Non-Inspection Related Testing Services 19%	Asset integrity solutions 28%
	Coal export activities 25%	Trade Related Services (inspection & testing) 18%	Supply chain and staffing services 19%
		Upstream Services 5%	Testing/laboratory services 8%
	Coal consumers 15%	Cargo Treatment Services 4%	
		Oil Condition Monitoring Services 3%	
		Measurement and Instrumentation 1%	

SOLUTIONS THAT REFINE, PROCESS AND DELIVER

DOWN STREAM

4 DEDICATION 9.0122

- Gasoline and Distillate Market
  - Core sales & operational activities have increased emphasis on the export market
    - Closely monitoring data on imports and exports
  - Follow tefinery economics in order to anticipate / enter early where these increases will occur (positive impacts on Cargo Treatment Services)
- Land Based Crude Shale Activities
  - Bakken (North Dakota) & Future Canadian Fields
    - Expanding operations to accommodate an increase of rail activity and pipeline crude oil movements for North America crude production
    - Currently structuring downstream operations in the Bakkens region
  - Eagle Ford (South Texas) & West Texas
    - Realigning structure to support an increase in rail and pipeline activity
- Mobile Downstream Labs – Onsite Operations
  - Portable onsite labs are cost effective in supporting basic crude oil testing of truck and rail systems onsite in the shale oil locations, Bakkens, Eagle Ford and West Texas, etc. Some of these locations will be combined with Upstream operations

SOLUTIONS THAT LOCATE, ANALYSE AND EXTRACT

UP STREAM

UTILISATION POSITION

Market penetration predominantly innovation driven

- SGS Auto GOR
  - Revenue potential – CHF 12m in the off-shore East Coast and Gulf of Mexico
  - Pilot program being run on Shell Perdido platform
- SGS GasPro™
  - Revenue potential – CHF 8m in on-shore shale play
  - Safety certification completed, service is being deployed
- SGS FluidPro PAL™
  - 1 unit is contracted
  - Legislation change may drive high sample volume

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US ENERGY MARKET SHIFT - ENVIRONMENTAL CONCERNS

The move to "unconventional" Oil and Gas extraction in the US market is creating significant environmental concerns in the community.

- Drilling and Extraction
  - Large amounts of water are required during the drilling/fracking stage which are injected under high pressure
  - 0.5% chemical(s) are added to the water to facilitate the fracking process and release of the natural gas & oil
  - Only 50-70% of the water used (production water) in recovered at the surface with the rest remaining underground
  - Production water will pick up hydrocarbons, salts, metals, residual chemicals , naturally occurring radioactive material and unknown bacteria which differ from well to well and over time
- Potential issues
  - Flow back of production water to the surface along geological fracture lines leading to ground & water contamination
  - Leakage into natural ground water and aquifers contaminating drinking water resources
  - Release of Green-house gases (methane) to atmosphere
  - Land usage
  - Seismic issues – earthquake inducement

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SGS ENVI – SOLUTIONS TO THE ENERGY MARKET

The US EPA developed & continues to develop rules which govern the envi requirements of this new market. New guidelines will be published in 2014 which will be more stringent than current version(s) to govern over 65000 wells with a projected increase of 7200 per year.

- SGS USA provides a wide range of services to this emerging market
  - Feasibility studies opportunities
    - Environmental Impact Assessments
    - Risk assessments (occupational health, process safety, hydrogeological, ecosystems)
    - Due Diligence audits of partners and process
  - Drilling and Production support
    - Field Sampling and Monitoring – air, soil and water for hydrocarbons and other contaminants
    - Data Management and Interpretation – hydrogeology & atmospheric modeling
    - Water, Waste Water & Carbon management (including foot-printing)
    - Work site safety and workers exposure monitoring
- Over 120 professionals with expertise across the value chain from project development to drilling, production and well abandonment.
- Labs in Wilmington, Corpus Christi, Alaska and via field modules for remote locations

Through effective review, test and monitoring program(s) the environmental challenges presented by these new opportunities are manageable.

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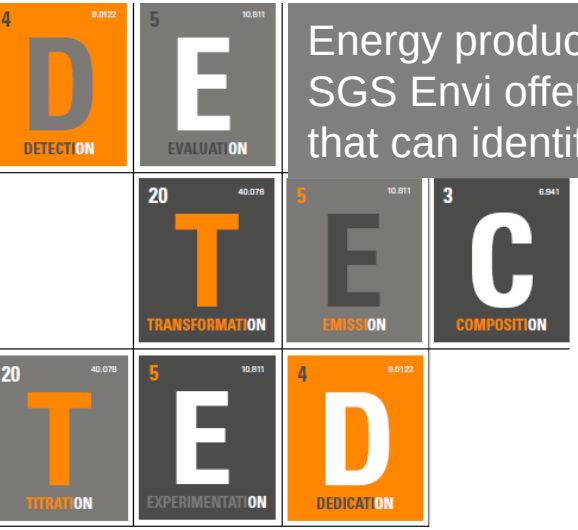
SGS ENVI – BRINGING INNOVATIVE SOLUTIONS TO THE ENERGY MARKET



Energy producers often receive bad publicity as **global polluters.**
SGS Envi offers unique high end solutions through its global centers of excellence that can identify the real source.

- Release of Biogenic versus Production Hydrocarbons to atmosphere
  - Identification of the source of hydrocarbon releases through its High-End Analysis (IRMS and Isotope Hydrocarbon fingerprinting)
  - C14 testing for biogenic and fossil methane release
- Water issues & microbial activity
  - Injection of tracers into groundwater to define aquifer characteristics and model hydrogeology
  - Identification of Low level micro-pollutants which may lead to future issues
  - ATP technology to assess microbial activity
- Radiation Services
  - Identification of Naturally Occurring Radioactive Materials
  - Consultancy associated with radioactive contamination
  - On site monitoring of process and personnel
  - Project management for the isolation & removal of contaminated equipment and material

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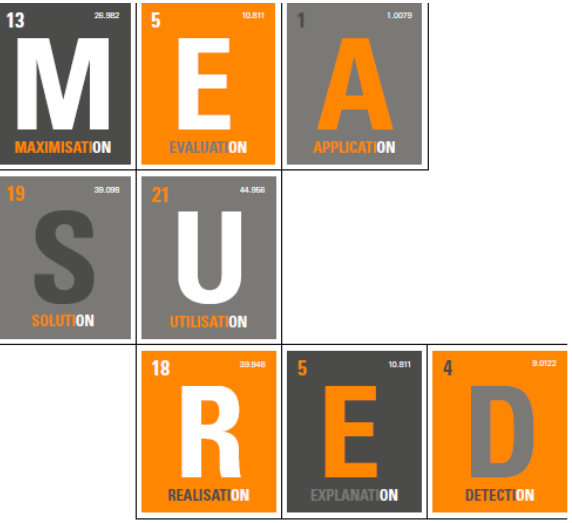
SGS INDUSTRIAL – SOLUTIONS FOR A COMPLETE PROJECT CYCLE



- Our US Industrial team knows assets, large and small, that are part of the energy sector
  - We support design and tendering design review capabilities and tender support
  - The procurement phase is where we offer core services of vendor inspection, expediting, manufacturer audits and product certification/inspection.
  - In the energy sector assets are often large so our customers turn to us for quality management, non destructive testing and materials testing during construction
  - The integrity of in service assets are supported by SGS with API inspection, non destructive examination, materials testing and where required failure and root cause analysis
- We also know people and use our technical expertise to identify staff to fill customer roles directly

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SGS INDUSTRIAL – ENERGY SECTOR EXPERIENCE AND EXPERTISE

- SGS has the right people to bring a diversity of experience to our customers' operations
  - Chief inspectors
  - Senior pressure vessel inspectors
  - Piping engineers
  - Software programmers and CAD engineers
  - Non destructive examination technicians at all levels
- SGS has expertise gathered from the field, formal study and through dialogue with regulators
  - Over 10,000 pipeline integrity digs
  - 25,000+ well sites inspected
  - 100,000+ AutoCAD drawings
  - 35,000+ pressure vessel calculations
  - 16,000+ rigorous pressure vessel evaluations

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2014
FOR THE COMPLETE PICTURE

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