



## EnCana's Energy Efficiency and Environmental Innovation Fund

Complimenting the EPA Natural Gas STAR Program

## Energy Efficiency Program

- Launched in 2007
- Goal of the Program is to create measurable reductions in energy use and related air emissions by:
  - developing cooperative working relationships across all levels of the company as well as with outside organizations to seek opportunities for energy efficiency
  - researching new technology that can have significant, value-added impact on energy/conservation and related reductions in greenhouse gas emissions
  - working with our staff and the communities in which we operate to incorporate energy efficient changes into their lives
- Since its launch, more than \$8 million in energy efficiency projects have been identified and financed throughout the company.
- Due to the overwhelming response to this program, the 2008 budget has been increased to \$50 million

## How it Relates to EPA Natural Gas STAR Program

- Energy Efficiency Program provides added incentive for employees to implement Gas STAR projects
- Many of the Energy Efficiency Projects also qualify for the Gas STAR Program
- 2008 Project Highlights Include:
  - Retrofit of High Bleed Pilot Valves
  - Solar Chemical Pumps with SCADA Interface
  - Roll-Out of Directed Inspection & Maintenance Program
  - Installation of Vapor Recovery Units

## Pilot Valve Retrofit

- Retrofits have been completed throughout the North and South Rockies Business Units
- Validation tests performed in Wyoming area in April 2008
- Utilized the FLIR camera and Hi-Flow Sampler to perform pre- and post-testing of the pilot valves
- Typical results of ~150 Mcf/yr methane reduction



## Solar Chemical Pumps with SCADA Interface

- 100 installations in MCBU
- 16 MMscf of gas saved per year
- 5-10% reduction of chemical usage
- SCADA data reduces number of visits per year



## SCADA Implementation with Solar Pumps

The screenshot displays the 'Chemical pumps' control interface. At the top, there are navigation tabs: ENCANA USA, EAST TEXAS SUMM, FIELD ALARMS, CDP SUMMARY, MARKETING, FACILITIES, WELLS SUMMARY, MEASUREMENT, INFO SUMMARY, CHEMICAL PUMPS, ESD SCREEN, and COMPRESSOR SUMM. The main title is 'Chemical pumps'. Below the title, there is a 'POLL DATA' section showing 'Normal' status for 'Andy Bonner 03' on '04/15/2009 6:05:20 AM'. There are buttons for 'Back to Deep Booster' and 'Back to Fairfield'. A large table lists pump data with columns: Status, Timestamp, Pump Spd, Pump Speed, Pump Vol Per/Day Qnts, VDI, Inlet Amb Temp C, Active Alms, Fluid Height, Pump Time, Vol Chem Delivd, and Chem Type. Below the table, there is a 'Ball Vok' section with columns: Ball Vok, Ball Amps, Motor Amps, and Active Alms. To the right, there is a 'Chemical Types' section showing 'A Bonner 3' and 'FOAMER'. At the bottom, there are several status indicators (OK, Mem Protect ON, Watchdog) and control buttons: SETPOINT, START PUMP, and STOP PUMP.

Status	Timestamp	Pump Spd	Pump Speed	Pump Vol Per/Day Qnts	VDI	Inlet Amb Temp C	Active Alms	Fluid Height	Pump Time	Vol Chem Delivd	Chem Type
Normal	04/15 06:05:09	52	52	112.4	0	16	0	0	1256	2725	FOAMER
Normal	04/15 06:05:20	48	20	48	83.1	0	17	0	2228	4402	FOAMER
Normal	04/15 06:05:30	0	0	0	101.9	0	10	0	1507	2523	FOAMER
Normal	04/15 06:05:33	56	24	56	118.9	0	17	0	1454	3400	FOAMER
Normal	04/15 06:05:44	32	13	32	110.0	0	16	0	1385	1718	FOAMER
Normal	04/15 06:05:44	40	17	40	102.0	0	18	0	1287	2145	FOAMER
Normal	04/15 06:05:54	40	17	39	21.4	0	16	0	2273	3787	FOAMER
Normal	04/15 06:06:12	48	20	48	212.8	0	15	0	732	1467	FOAMER
Normal	04/15 06:05:21	16	9.7	22.27	487.6	0	0	0	0	0	CORPINH

## Directed Inspection & Maintenance Program

- 2008 – Roll-Out of DI&M Program
- Projected Annual Savings: \$2.3 million/year
- Purchased FLIR cameras and Hi-Flo Samplers for all business units
- Protocol and Training currently being rolled out
- More information to follow with Cindy Allen's presentation

## Installation of Vapor Recovery Units

- VRUs to be installed at locations in Colorado and Wyoming
- VRU installed at the M1E well pad in the South Piceance
  - Projected Annual Savings: \$280,000
- VRU to be installed at Frenchie Draw Compressor Station



## Other Interesting Energy Efficiency Projects

- Project Porchlight / Camplight
  - Encourages the switch to more energy efficient light bulbs
- Employee Rebate
  - Employees can receive up to \$600 rebate for purchasing Energy Star products
- Fuel Additives for Diesel and Natural Gas Drill Rig Engines
  - Achieve lower fuel consumption
  - Strive for lower emissions
  - Potential to extend the life of the engines
  - Increase engine reliability

## Environmental Innovation Fund

- Launched in 2004 to finance projects that:
  - Reduce air emissions, operational waste and our physical footprint
  - Conserve and recycle water, energy and materials
  - Protect and reclaim groundwater, land and habitat
  - Develop new, renewable energy technologies
- To date, the fund has donated more than \$23 million to 15 projects
- Some projects are related to oil & gas, but others are more broadly based energy-related improvements

## Energy Efficiency Fund U.S. – Path Forward

- \$10MM for US Operations
- Operations team working to discover new ideas
- Role of Energy Efficiency Fund in the Carbon Constrained World
  - Need to tie in GHG Emissions Reduction Verification to Energy Efficiency Program