



# *Fleet*

## *“Fuel Efficiency Strategy”*

*Peter Michaud*



# ***Who is NB Power***

- On April 24<sup>th</sup>, 1920 the NB Electric Power Act established the New Brunswick Power Commission, a Crown Corporation known today as NB Power.
- NB Power is a Crown Corporation wholly owned by the Government of New Brunswick and is composed of a holding company and 5 sub-companies: NB Power Distribution and Customer Service, NB Power Generation, NB Power Nuclear, NB Power Transmission, and NB Power Holding Company.
- We are the electrical utility in the province of New Brunswick.



# ***About NB Power***

- Approximately 2,500 regular employees
- Total generating capacity 3777 MW
- Over 380,000 direct and indirect customers
- Over 27,000 kilometres of power lines
- Diversified generating system (hydro, nuclear, oil, coal and diesel powered stations)
- Geographical location makes us one of North America's most interconnected transmission systems





# ***Why the Need to Reduce***

**Why did NB Power need to embark on this project to reduce fuel consumption?**

- Financial responsibility to our rate payers
- Emissions increasing year over year
- Fleet complement growing
- NB Power's commitment to reducing our carbon footprint





# Vehicle Count

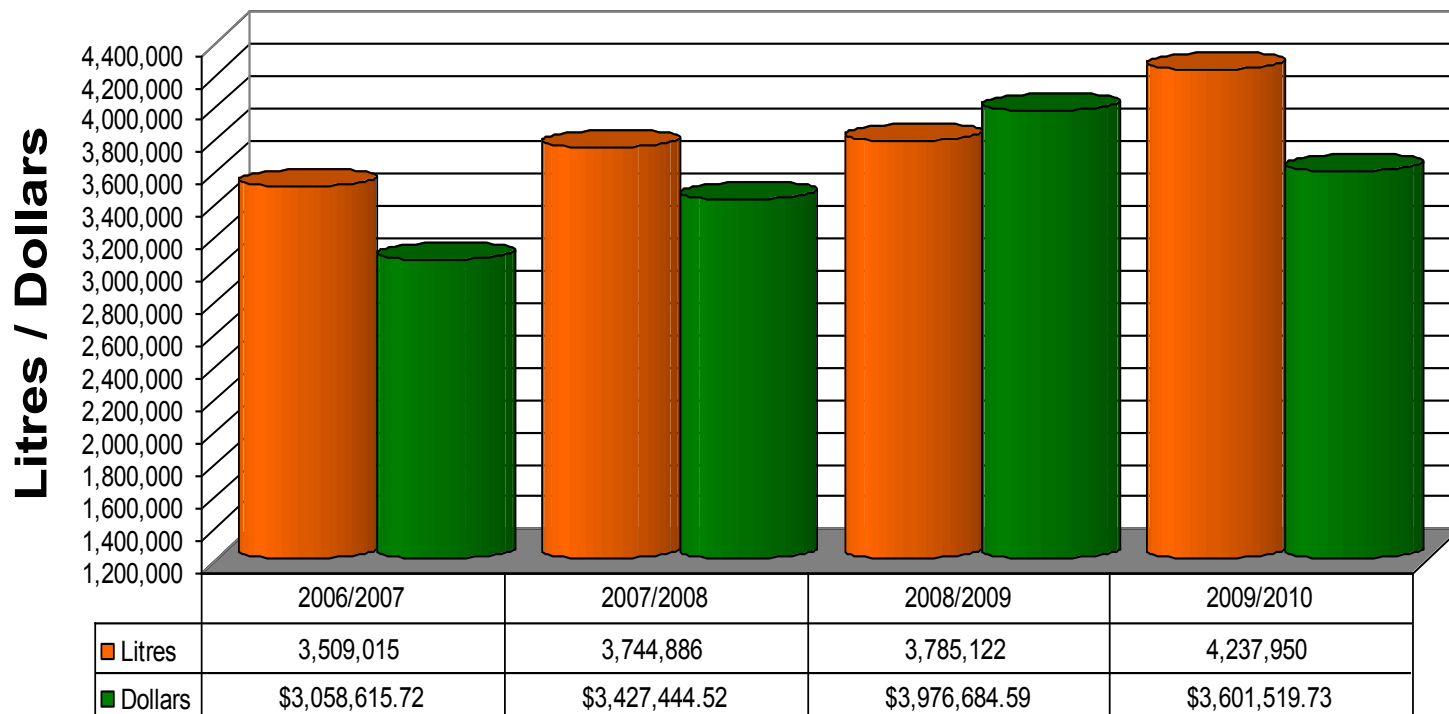
<i>Vehicle Type</i>	<i>FY2007</i>	<i>FY2008</i>	<i>FY2009</i>	<i>FY2010</i>
<i>Cars</i>	60	47	49	50
<i>1/4 to 3/4 Ton Trucks</i>	389	364	374	379
<i>1 to 10 Ton Trucks</i>	214	203	205	211
<i>Off Road</i>	187	248	236	241
<i>Total</i>	<b>850</b>	<b>862</b>	<b>864</b>	<b>881</b>

\* Vehicles that burn diesel or gas





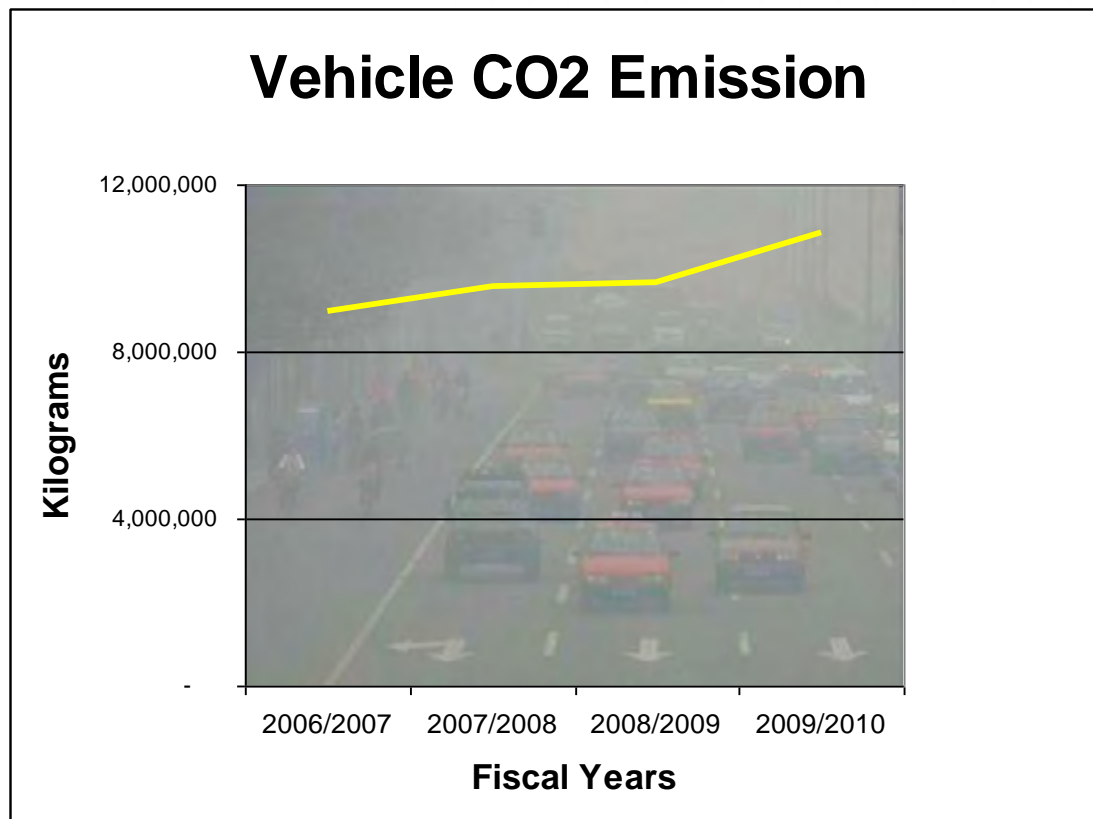
## Fuel Purchasing History - Year over Year



■ Litres ■ Dollars



# CO2 Emissions



**FY2010 – 10,842 MT**  
**FY2009 – 9,647 MT**  
**FY2008 – 9,550 MT**  
**FY2007 – 8,950 MT**

# *Visualization*



# *Goals of the Project*

- Develop and implement sustainable fuel reduction strategies.
- Implement a new “**Anti-Idling Policy**”.
- Develop monthly reports to monitor result of fuel reduction strategies.
- Develop an education plan with our “Health & Safety Culture” to implement the “**Smart Driver for Utilities**” training program developed during the project.
- Recommendations on future direction of on-board computer (OBC’s) technology at NB Power
- Reduce fuel consumption by 7% in three years



# Project Partners

- Natural Resources Canada (NRC)
- Hired FP Innovations (Research Consulting Engineering Firm)
- ISAAC Instruments (Hardware)
- Hired McKenzie-Mohr & Associates  
(Community Based Social Marketing)
- NB Power Project Team
  - Kelly Hill (Project Sponsor, DCS&T)
  - Peter Michaud (Project Manager)
  - John Patrick McCleave (Project Assistant)
  - 25 NB Power Staff (Vehicle Operators)

# ***Trucks Participating in the Project***

<u>Count</u>	<u>Description</u>
7	-2009 ½ Ton Pickups
8	-2009 CSR Trucks
6	-2009 Material Handlers
<u>4</u>	-2009 Digger Derricks
<b>25</b>	<b>Total</b>

## *1/2 Ton Pick-Up*



## *Customer Service Truck*



## ***Material Handler***



## ***Digger Derrick***

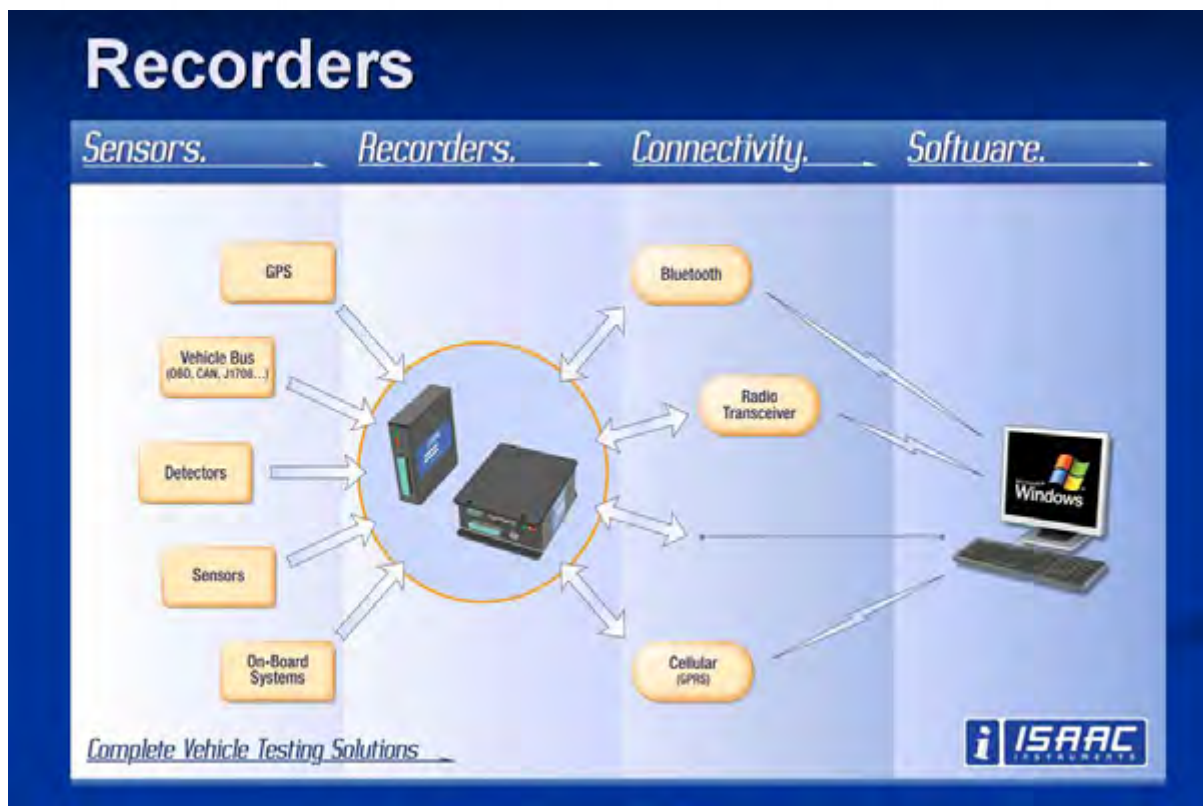


# ***Embracing Change***

- Develop a change management strategy using some of the social marketing techniques Dr. McKenzie provided.
- Implement a project participant communication strategy.
- Strong Health and Safety Culture at NB Power helps facilitate the goals of this project.
- Engage project participants, they have the knowledge and the know how to be successful. They are part of the solution.



# Innovative Approach



© ISAAC Instruments

# Embracing Change with “Education & Training”



## Smart Driver for Utility Fleets

Learn about fuel-efficient driving techniques and practices



# Report Samples

Microsoft Excel - Dashboard (CSR).xls

Executive Dashboard - N.B. POWER

Date: 1/31/2011

Monthly Average

Vehicle Type	Vehicle ID	Fuel Consumption - Rural (>70 km/h)	Fuel Consumption - Urban (< 70 km/h)	Manageable Idling time (hh:mm:ss)	Speeding > 110 km/h	Hard Acceleration	Hard Braking	Engine Over Revving	TOTAL SCORE	Average Per Category
		L/100 kms	L/100 kms	(% Operating Time)	Driving Time (%)	(Occurrences/ 100 km)	(Occurrences/ 100 km)	(Occurrences/ 100 km)	/100	/100
CSR (Class 5)	40085	18	24	14.0%	0%	6	10	30	83.7	68.5
		18.8	23.4	23.38%	0	11	30	5		
		19.6	24.4	23.87%	0.0%	0.0	2.2	6.1		
		-4.4%	-4.0%	-2.1%	0.0%	100.0%	92.6%	-25.5%		
	40086	82.88	91.37	46.85	96.16	141.01	127.00	0.51	64.7	
		18	24	14.0%	0%	6	10	30		
		24.8	28.2	19.82%	0.0	11	21	38		
		23.1	27.5	19.97%	0.0%	0	2	29		
	40088	6.9%	2.6%	-0.8%	-2275.0%	100.0%	89.2%	22.9%	66.8	
		46.93	20.43	67.83	33.33	141.01	126.62	96.24		
		18	24	14.0%	0%	6	10	30		
		21.9	23.0	29.25%	0.0	3	14	2		
		22.7	24.4	30.29%	0.0	0	3			
		-3.5%	-6.0%	-3.5%	95.1%	100.0%	78.3%	-28.4%		





# Report Samples

Microsoft Excel - Dashboard (CSR).xls

**Dashboard Report**

**NB Power Fleet Dept**

**CSR - Truck 40085**

Project Base Line Data  
From June 1st, 2010 to September 30th, 2010

Report Date: January 31, 2011

Engine Operating Hours	Truck	Baseline Average
Drive Time	248:50:00	305:52:08
Idle Time	118:58:58	141:00:34
Traffic Idle Time	69:30:30	76:30:14
Boom Time	44:43:01	53:15:16
Engine Hours	<b>477:00:28</b>	<b>576:38:12</b>

Drive Time	Truck	Baseline Average
Drive Time	248:50:00	305:52:08
Urban < 70km/h	158:59:05	191:05:34
Road > 70km/h	89:50:55	114:42:06
Speeding > 110 km/h	0:00:00	0:04:28

Kilometers Driven	Truck	Baseline Average
Urban < 70 km/h	6,406	7,494
Road > 70 km/h	7,409	10,166
Kilometer Driven	<b>13,815</b>	<b>17,660</b>

Utilization  
Utilization: 3.7 days a week

CO2 Emissions	Truck	Baseline Average
Idling Emissions	2,384.8	3,055.8
Driving Emissions	13,322.1	19,815.3
Total Emissions	<b>15,706.6</b>	<b>22,871.2</b>

### Engine Operating Hours

Drive Time 52%  
Idle Time 26%  
Boom Time 9%  
Traffic Idle Time 13%

### Drive Time

Urban < 70km/h 64%  
Road > 70km/h 36%  
Speeding > 110 km/h 0%

### Kilometer Driven

Urban < 70 km/h 36%  
Road > 70 km/h 64%

### CO2 Emissions

Total Emissions  
Driving Emissions  
Idling Emissions

Truck Baseline (Blue), Group Baseline (Green)

### Engine Operating Hours

Boom Time  
Traffic Idle Time  
Idle Time  
Drive Time

Truck Baseline (Blue), Group Baseline (Green)

### Drive Time

Speeding > 110 km/h  
Road > 70 km/h  
Urban < 70 km/h

Truck Baseline (Blue), Group Baseline (Green)

### Kilometers Driven

Kilometer Driven  
Road > 70 km/h  
Urban < 70 km/h

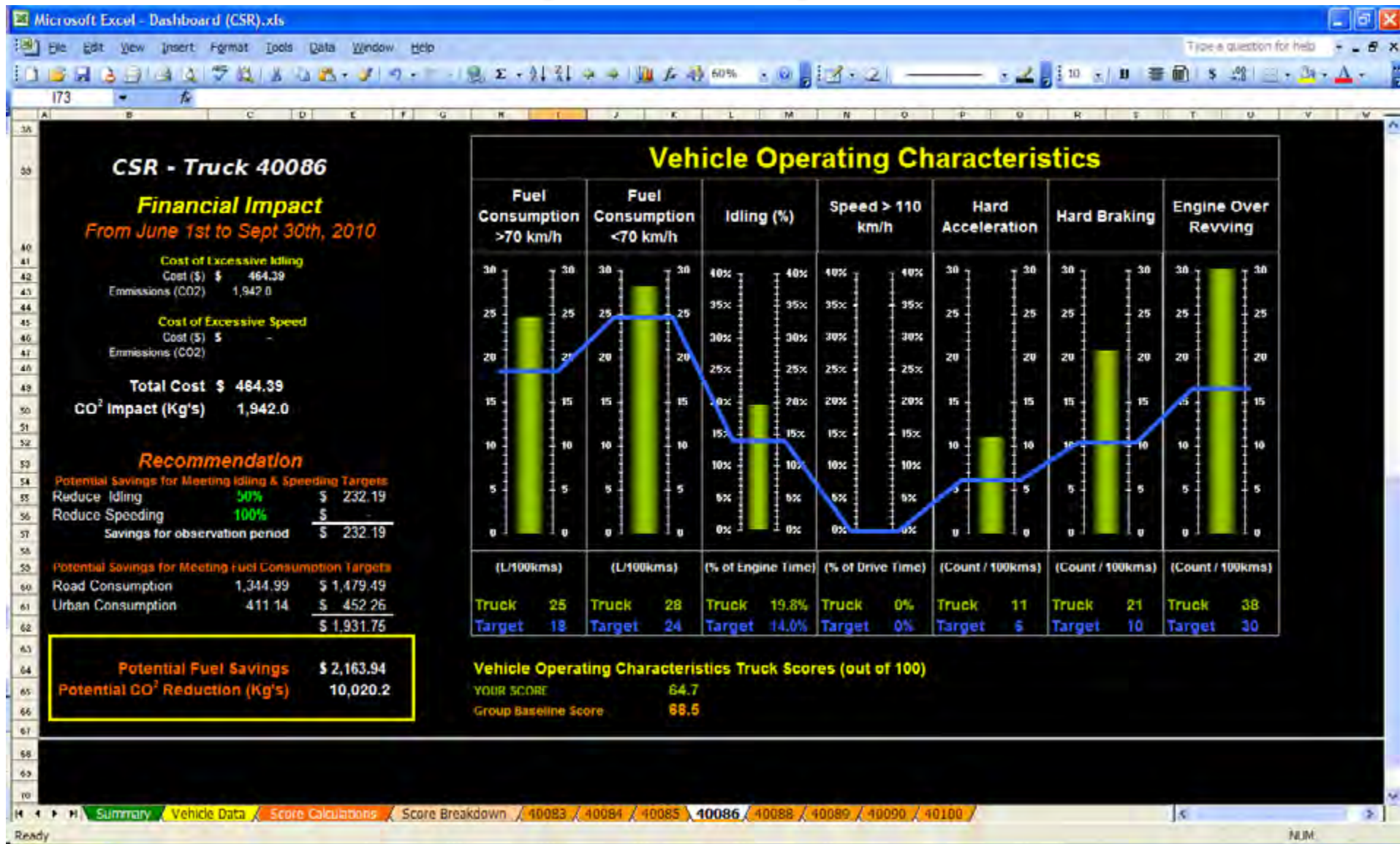
Truck Baseline (Blue), Group Baseline (Green)

Summary | Vehicle Data | Score Calculations | Score Breakdown | 40083 | 40084 | **40085** | 40086 | 40088 | 40089 | 40090 | 40100

Ready



# Report Samples



# *Fleet*

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*Fleet Dept*



# Questions

