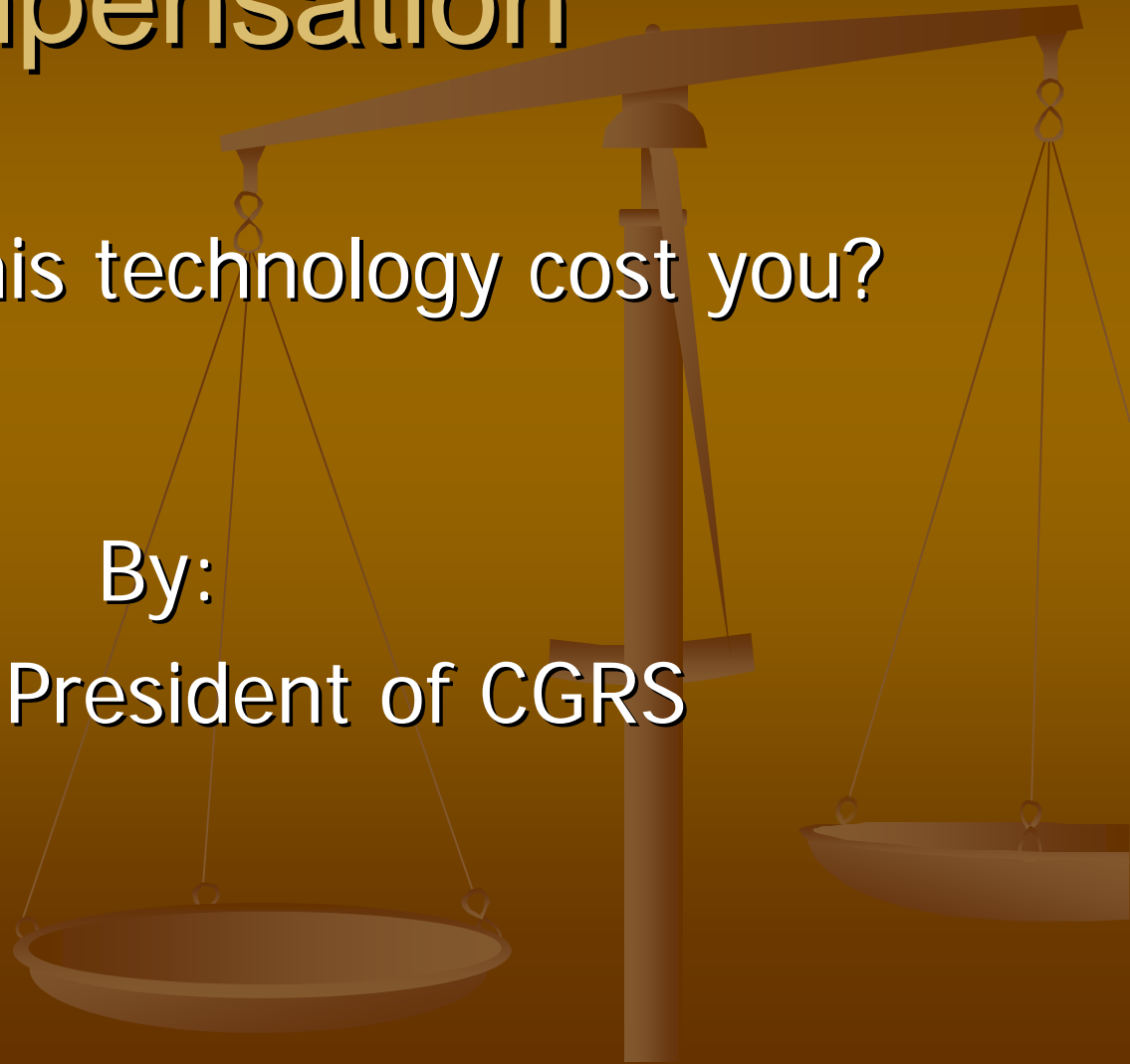


Automatic Temperature Compensation

What could this technology cost you?

By:

Eric Hick, President of CGRS



Outline

- Conversion Tables
- ATC in Canada
- Equipment Costs
- Other Potential Costs



GASOLINE

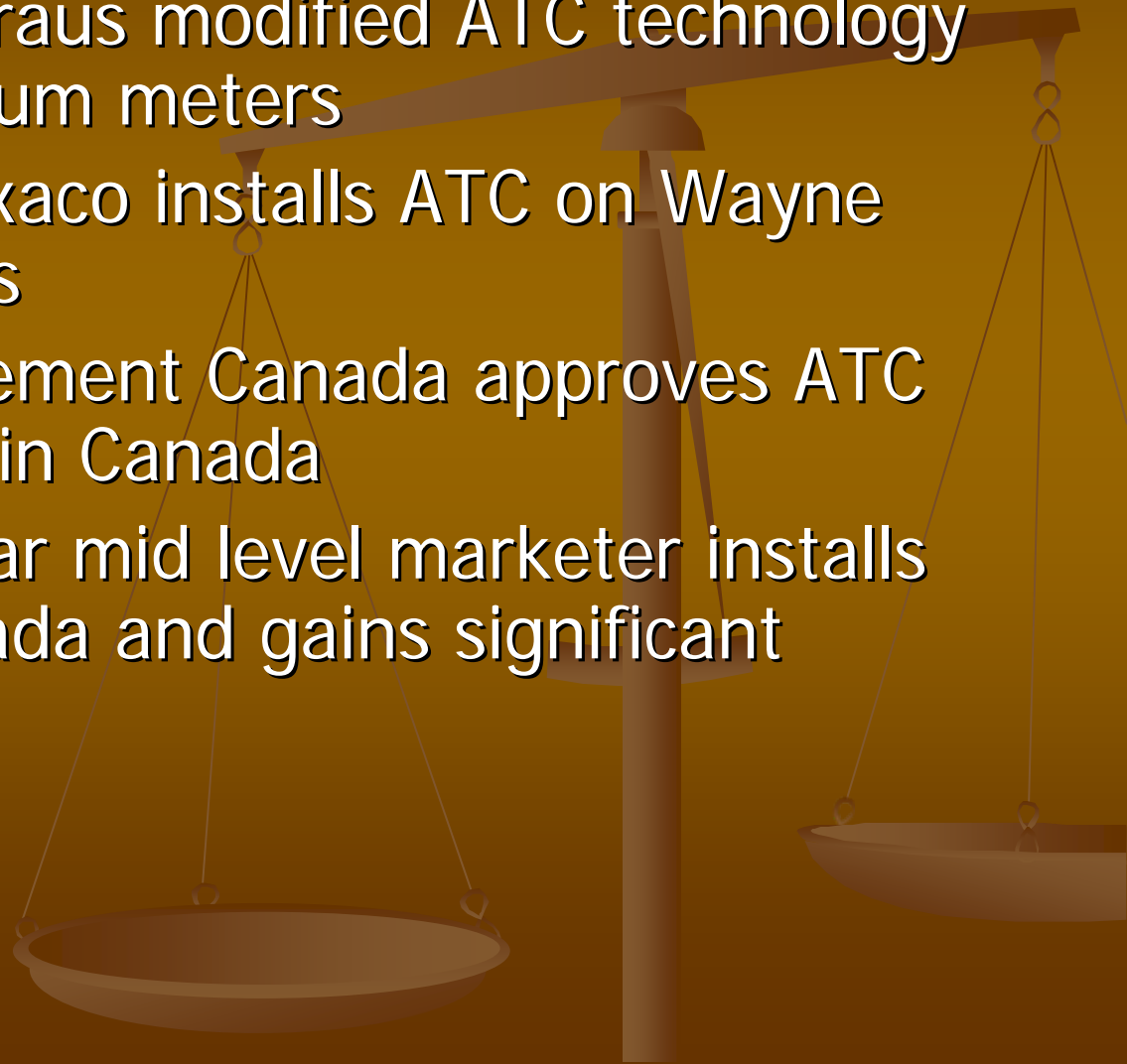
Gallons Dispensed	Temp Deg F	API Correction Factor	Volume Change In Gal	% Change	Fuel Price	Price Diff Per 20 Gal
20	0	1.0412	0.824	4.1%	3	\$ 2.47
20	5	1.0378	0.756	3.8%	3	\$ 2.27
20	10	1.0344	0.688	3.4%	3	\$ 2.06
20	15	1.031	0.62	3.1%	3	\$ 1.86
20	20	1.0276	0.552	2.8%	3	\$ 1.66
20	25	1.0242	0.484	2.4%	3	\$ 1.45
20	30	1.0207	0.414	2.1%	3	\$ 1.24
20	35	1.0173	0.346	1.7%	3	\$ 1.04
20	40	1.0139	0.278	1.4%	3	\$ 0.83
20	45	1.0104	0.208	1.0%	3	\$ 0.62
20	50	1.0069	0.138	0.7%	3	\$ 0.41
20	55	1.0035	0.07	0.4%	3	\$ 0.21
20	60	1	0	0.0%	3	\$ -
20	65	0.99652	-0.0696	-0.3%	3	\$ (0.21)
20	70	0.99302	-0.1396	-0.7%	3	\$ (0.42)
20	75	0.98953	-0.2094	-1.0%	3	\$ (0.63)
20	80	0.98602	-0.2796	-1.4%	3	\$ (0.84)
20	85	0.98251	-0.3498	-1.7%	3	\$ (1.05)
20	90	0.97899	-0.4202	-2.1%	3	\$ (1.26)
20	95	0.97546	-0.4908	-2.5%	3	\$ (1.47)
20	100	0.97193	-0.5614	-2.8%	3	\$ (1.68)

DIESEL

Gallons Dispensed	Fuel Temp Deg F	API Correction Factor	Volume Change	% Change	Fuel Price	Price Diff Per 20 Gal
20	0	1.0279	0.558	2.8%	3	\$ 1.67
20	5	1.0256	0.512	2.6%	3	\$ 1.54
20	10	1.0233	0.466	2.3%	3	\$ 1.40
20	15	1.021	0.42	2.1%	3	\$ 1.26
20	20	1.0187	0.374	1.9%	3	\$ 1.12
20	25	1.0163	0.326	1.6%	3	\$ 0.98
20	30	1.014	0.28	1.4%	3	\$ 0.84
20	35	1.0117	0.234	1.2%	3	\$ 0.70
20	40	1.0094	0.188	0.9%	3	\$ 0.56
20	45	1.007	0.14	0.7%	3	\$ 0.42
20	50	1.0047	0.094	0.5%	3	\$ 0.28
20	55	1.0023	0.046	0.2%	3	\$ 0.14
20	60	1	0	0.0%	3	\$ -
20	65	0.99765	-0.047	-0.2%	3	\$ (0.14)
20	70	0.9953	-0.094	-0.5%	3	\$ (0.28)
20	75	0.99294	-0.1412	-0.7%	3	\$ (0.42)
20	80	0.99059	-0.1882	-0.9%	3	\$ (0.56)
20	85	0.98822	-0.2356	-1.2%	3	\$ (0.71)
20	90	0.98586	-0.2828	-1.4%	3	\$ (0.85)
20	95	0.98349	-0.3302	-1.7%	3	\$ (0.99)
20	100	0.98112	-0.3776	-1.9%	3	\$ (1.13)

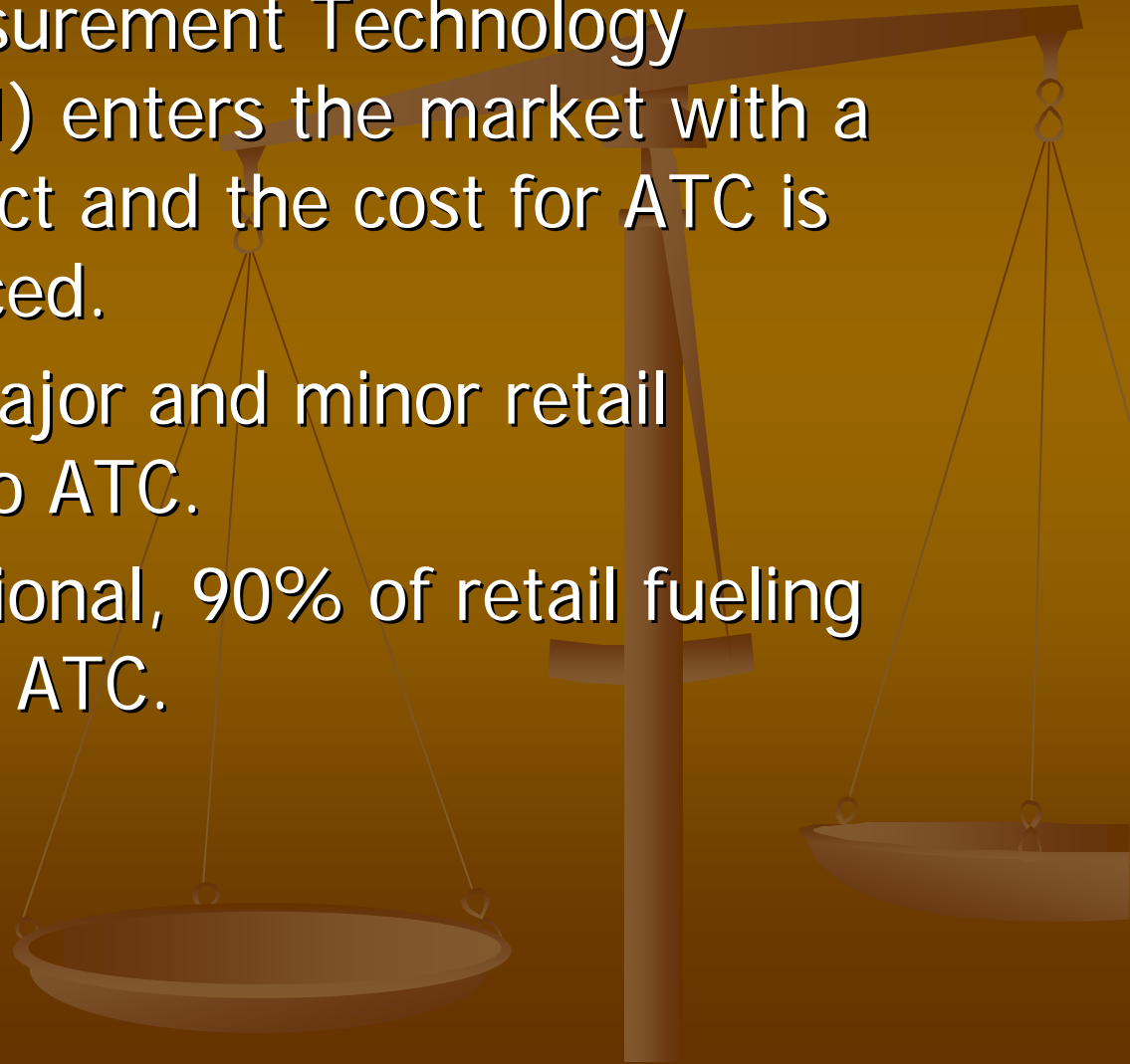
ATC in Canada

- Early 1980's – Kraus modified ATC technology for retail petroleum meters
- Mid 1980's – Texaco installs ATC on Wayne dispenser meters
- In 1990 Measurement Canada approves ATC for optional use in Canada
- In 1991 a popular mid level marketer installs ATC across Canada and gains significant market share



ATC in Canada

- Mid 1990's – Measurement Technology Incorporated (MTI) enters the market with a competitive product and the cost for ATC is dramatically reduced.
- By the late 90's major and minor retail marketers move to ATC.
- 2007 – ATC is optional, 90% of retail fueling facilities are using ATC.



ATC Equipment in the US

- Major dispenser manufactures don't have UL approval for ATC equipment.
- Third party ATC retrofit companies don't have UL either.



Dispenser Upgrade Costs

**Mechanical Meter Retrofit Kit
(Remove old style mechanical
registers and replace with new
electronic registers) Per Hose**



Examples:

Tokheim 780, 1250, Gilbarco Trimline, Bennett 3788, 4000, 5000, Wayne Mechanical, Gasboy Mechanical, others Also available as new registers (remove existing electronic registers and install new electronic registers with ATC): Tokheim 162, 262, 262A

\$3,600—\$5,400 per dispenser

Dispenser Upgrade Costs

ATC Kit (Add electronic board, temperature probes, and dry well to existing electronic dispensers) Per Dispenser



Examples:

Gilbarco Highline, Legacy, Advantage, Encore, Wayne Ovation and Vista, Salesmaker Pro and MPD, Bennett 6000, 7000, 8000, 9000, Southwest 640, MMD Tokheim 162, 262, 9800, MMD, 262A, TCS, TCSA, Premier

\$2,400—\$4,700 per dispenser

Dispenser Upgrade Costs

Additional Costs for New Dispensers with ATC

Examples:

Wayne Ovation, Vista and Gilbarco Encore, Advantages

\$2,000 - \$3,500 per dispenser



Other Cost Considerations

- Added costs for weights and measures training in order to perform ATC meter calibrations - private contractors and regulatory agencies.
- Costs for new calibration equipment such as hydrometers, software and provers with drywells for temperature evaluation.
- Added cost for training factory service technicians on the new equipment.
- ATC equipment maintenance costs.
- Adjustments to fuel pricing to offset the added costs associated with ATC.

