PAIN!

90 MIN PRES.
AT 2:30 PM

TAXES

DENTIST

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[Hand-drawn graph showing a timeline with 'PAIN!' at the top and '90 MIN PRES. AT 2:30 PM' to the right, with bars labeled 'TAXES' and 'DENTIST']
The APP That Makes Green House Gas Solutions Easy

Tri-Association Manufacturing Conference

Screaming Power

Self-Actualization - A person’s motivation to reach his or her full potential. As shown in Maslow’s Hierarchy of Needs, a person’s basic needs must be met before self-actualization can be achieved.

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Maslow's Hierarchy of Needs

Abraham Harold Maslow was an American psychologist who studied positive human qualities and the lives of exemplary people. In 1954, Maslow created the hierarchy of needs. Maslow posited that individuals seek to fulfill these needs in order. The hierarchy is divided into two main groups: deficiency needs and growth needs. Deficiency needs are those that are essential for survival and well-being, while growth needs are those that promote personal growth and self-actualization.
Screaming Power
Apps?

Using Apps?

Lets start with smart phones?

- Business
- Personal
- Fun

Your phone apps are designed to either save time or waste time

- How many pages of apps?

How has that changed over the last year?
What We Will Talk About

The APP That Makes **Green House Gas** Solutions Easy

- Customer Challenges
- How it Works
- How Can This Work For You
- Utility Solution
- What Does This Mean To You?
Who Is In The Room?

- Industrial
- Commercial
- Municipal/Government
- Healthcare
- Education
- Who have I missed?
Customer Needs (as we hear them)

• Tracking and reducing GHG
• Reduce costs/improving efficiencies
• Identify opportunities (capital and operational)
• Prioritizing action
• Oversight/Verification
• Project monitoring
• Longevity (Benefits sustained over time)
Making GHG Easy

While GHG is the public focal point its reduction is the result of energy conservation and operational improvements.

- Getting the Data
- Analysis and Validation
- Weather Normalization
- Benchmarking
- Historical Comparisons
- **Green House Gas** Conversion
- Presentment (Dashboards)
- Reporting
How We Apply a Solution

Cradle to Grave (Full spectrum of the project)

Mobility

Benchmarking
- Current state
- Data collection
- Verification

Implementation
- Auditing process
- Project identification
- Installation

Tracking/Tuning
- Assessment
- Reporting
- Evaluation
Getting the Data

• Scanned Paper (bills, summaries, paper reports)
• Spreadsheets
• Metered data
  • Portfolio Manager
  • Utility meter summaries
  • Historical usage reports
  • Live interval meter data (smart meters)
• Websites
• Cloud data
• Building GPS location
• Google mapping
• Building categorization
Analysis and Validation

• Apply “Machine Learning”
• Trends
  • Bandwidth parameter errors
• Data errors
• Missing or duplicated data
Weather Normalization

Compare the consumption of different buildings by extracting the weather-related effects

• Structure Dependent Energy Usage
  • Beyond the Degree Day Method

• Detailed methodology:
  • Building factors: occupancy, structure, orientation
  • Weather factors: location, wind, solar

• Forecasting models (track building behaviour)
Benchmarking

Sets a reference by which performance or change can be measured

• Asses past billings:
  • Electricity
  • Natural gas
  • Water

• Profile analysis (interval meter)

• Assess intensity against industry trends, usage, occupancy

• Building operations

• Review internal loads
Historical or Comparative Analysis

Performance records

• Taking weather normalization into account
• Filters for building, use, location, time frame
• Compare like buildings
• Assess performance against benchmark
• Evaluate performance or efficiency measures
• Utilize any comparison timeframe
Green House Gas Conversion

Greenhouse gases are a group of compounds that are able to trap heat (longwave radiation) in the atmosphere, keeping the Earth's surface warmer than it would be if they were not present.

- Conversion of the electricity and natural gas consumption
- Greenhouse Gas (GHG) Emissions Estimation Standards
- “Comparison of Greenhouse Gas (GHG) Emissions Estimation Standards”
  - ECCC versus the UNEP methodology
- Report generation

Carbon dioxide (CO₂), Methane (CH₄), Nitrous oxide (N₂O), Fluorinated gases
Presentment - Dashboards

Custom designed for the palm of your hand
Information you need reports at your finger tips

• Home screen and successive screens designed with the user in mind:
  • Administrative
  • Super User
  • Operations
  • Management
  • Finance
• Sign in protocols
• Secure access
Automated Reporting

Energy and Water Reporting – Regulation Guidelines


• The five key components of Ontario’s Large Building EWRB initiative are:
  • Building types
  • Annual reporting
  • Annual disclosure
  • Data verification
  • Reports

• Threshold is continually being lowered

• Accountable!
Customer Needs, Revisited

Energy Savings
GHG Reduction
Reliability
ROI
Incentives
Revenue
Risk
Innovation
Longevity

SENSE OF URGENCY

FLEXIBILITY
How Do You Use Your Phone?

- Reviewing Your Bills?
- Paying for Stuff on Your Phone?
  - Phone Bill
  - VISA/MC/AMEX
  - Gas
  - Electricity
  - Other

Do you remember your first internet purchase, app purchase?
How Can This Work For You

The app is like a set of ingredients and tools so that you can cook up any solution to fit your needs.

• Walk through the City of Toronto App
• Adaptable to any business application
• Envision your design, your purpose, your requirements
• Apply dashboards, processes, locations, maps, graphs, reports, alerts
Market Tracking

- Forecast the 5 minute price
- Impact on electricity demand costs
- Global Adjustment
- Demand Reduction
- Energy cost avoidance
- Natural Gas Adaptable
Demand Forecasting

Global Adjustment - Class A

- Forecast demands
- Apply to single buildings
- Apply to aggregate loads
Weather Normalized

- Applied to all business applications
- Accurate energy comparison
- True representation of measures
Business Centres

Apply to your requirements

- Industrial processes
- Commercial sites
- Schools
- Healthcare operations
Energy Intensity

Alerts to deviations

• Applied to business centres
• Key operations
• Input or output variables
• Industrial processes
Site Description

Custom designed to the user

- Asset address
  - GPS location
  - Picture
  - Description
- Processes
- Product component
Alerts or Notifications

Inbound or outbound

- Outside of expected boundaries
- Spikes or abnormalities
- Outbound instructions
- Status reporting
Layered Communication

- Director
- Management
- Operations

- Share

- App Usage
  - Metrics
  - KPIs
  - Action Plan
  - Oversight

- Critical Information
  - Reports
  - Comparisons
  - Recommendations
  - Analytics

- Decision making

- Projects
- Response
- Measurement
Energy Reports

- Electricity
- Natural Gas
- Financial billing
- Any KPI
GHG Report

- Filtered for Yearly, Monthly breakdowns
- Comparison analysis
- Weather normalized
- Impact of measures
- Automated outbound Ontario reporting
Asset Management

- Rank performance
- Compare like or similar operations
- Capital investment for greatest return
- Apply operational awareness
- Create internal competition

- How do you assess and compare?
Project Tracking

**Applying shared communications**

- Track progress
- Receive updates
- Send communications
- Share within the organization
“In The Black”? 

In this case the green

Key Performance Indicators (KPI)

• Operations
• Finance
• Production
Social Engagement

Share internally and externally

- Success stories
- Goal achievement
- Comparisons within industry
- Governance achievements
- Shareholders
- Customers
Customer App
- Market prices
- Bill Presentment
- Energy Management
- Outage Notification
- News and Twitter
“Custom Designed for Lakefront”

Full Customer Input for Content and Layout

Updates and News

Current pricing.
Time of Use or Hourly Ontario Energy Price

Billing Access Menu

Feature Access
Replicated Bill

Custom Designed For Lakefront

Duplication of the Customer Electricity Bill

Matching Financial Summary

Customer Validation Information

Comparison Graphs

Full Detailed Breakdown
Payment Summary

Details of What is Owning and When

- Due date
- Amount owing
- Electricity usage
- Water consumption
- Comparison summaries
Scroll Down Details

Custom Designed For Lakefront

Cost Details

Billing period breakdown
Amount owing
Meter details
Water and sewer summaries
Electricity summaries. Time of Use breakdown
Consumption Analysis

Monthly kWh Consumption

Metering details

kWh/month bar chart
Bill Presentment – TOU

Monthly Time of Use kWh

- Meter and location details
- Monthly kWh Time of Use (Peak, Mid-Peak, Off-Peak)
Save On Energy

Custom Designed For Lakefront

Applying Incentive Programs

Save On Energy programs
Electronic Coupons

Replicated Coupons from Save On Energy

Program details. Eligibility, etc.

Bar code details track customer uptake

Directs customers to qualified retailers

Utility can track progress on program uptake
Outages - Notifications

Scheduled and non-Scheduled

Outbound notifications

Inbound notifications from customers
Outages - Mapping

Location Defined – Geographic Boundaries

User defines and maps the effected area

Outbound updates to customers

Custom Designed For Lakefront
News/Twitter/Notifications

Custom Designed For Lakefront

User Defined Messaging

Custom defined outbound messages

Tweet and re-Tweet messages
Screaming Power

User-Friendly
Information at your fingertips

Educate & Share
Automate, educate, & socialize

Compare
Compare properties / update information

Simplify & Present
Gather, simplify information from anywhere

Manage & Report
Manage asset value & performance

Custom-Design
Designed to meet operations and reporting demands

Key-Performance Indicators
KPIs in a user-friendly format
What Does This Mean To You?

Imagine how an app can help to maximize your business potential

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