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Web Survey Implementation

Innovations in Electronic Data Reporting: The Greenhouse Gas Emissions Project

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Canada

Presentation overview

- Project background
  - Goal
  - Partners
  - Legal framework
  - Client requirements
  - STCs background in Electronic Data Reporting
- Application
  - Tools
  - Features
- Lessons learned

Goal

- To develop a harmonized, “single-window,” system for GHG emissions
- Avoid duplication and minimize reporting burden
- Phased approach
- Phase One announced March 2004
  - Emissions data collected from facilities that emit 100 kilotonnes or more of CO2 equivalent
  - Deadline for reporting June 1, 2005

Partners

- Reporting vehicle built by Statistics Canada
- Environment Canada
- Natural Resources Canada
- Provincial and territorial governments
- Industry stakeholders

Legal Framework

- Data jointly collected by Statistics Canada
  - Statistics Act (Data sharing provision)
- Environment Canada
  - Canadian Environment Protection Act
- The Government of Alberta
  - Climate Change and Emission Management Act

STC background in EDR

- First on-line survey conducted in December 2002
- Built a Public Key Infrastructure and secure network
- Developed administrative tools to manage collection and facilitate data re-integration
- Offer 37 surveys with over 60 000 respondents

Application development tools

- Used the tools already in place for EDR
  - Microsoft .NET framework
  - Web pages in asp.net and Javascript
  - Customized object library
  - SQL server for collection database
  - PKI infrastructure using Entrust True Pass 7.0

Application features

- On-line registration
- Save and resume
- Automated calculation of total and creation of a summary page
- Data verification
- Non-repudiation

On-line registration

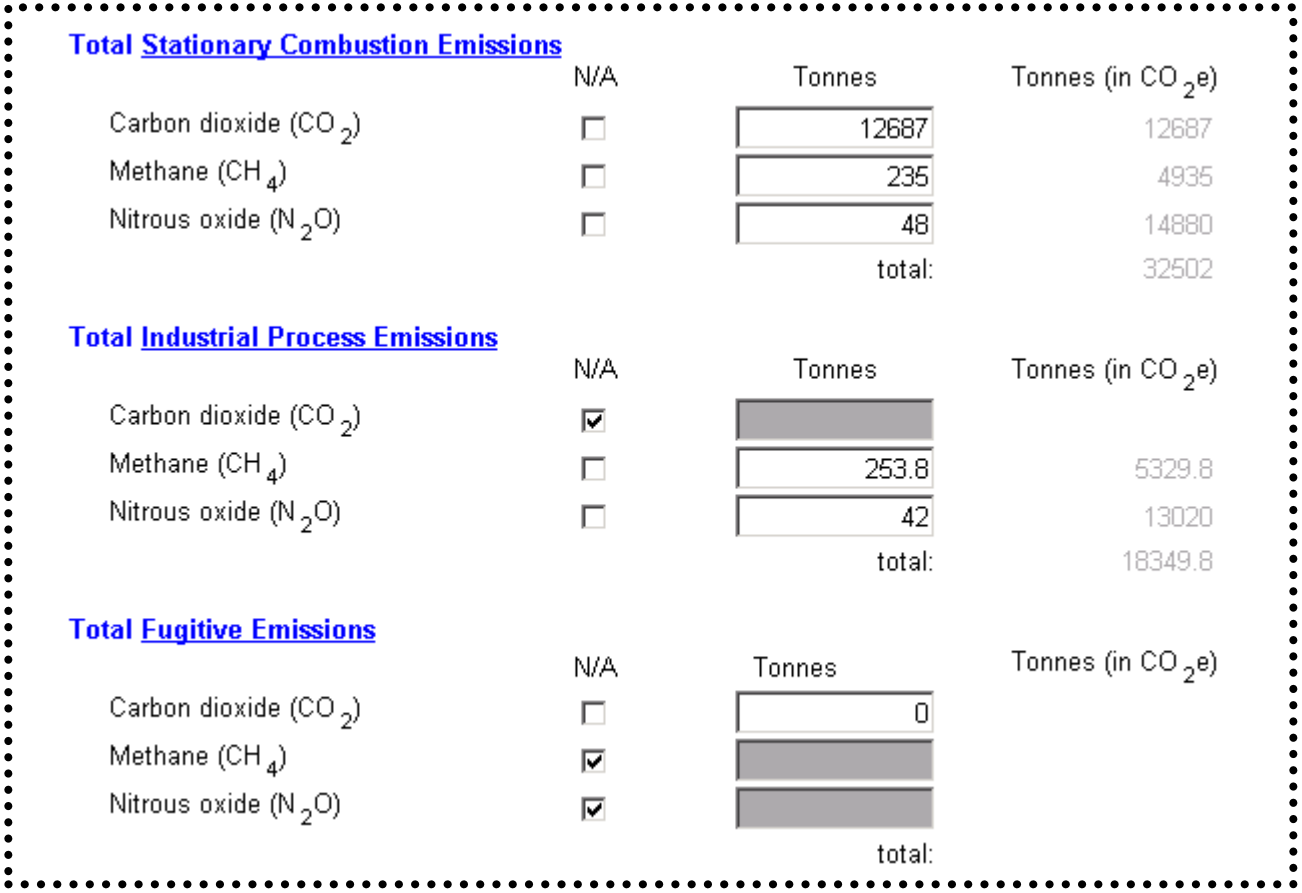
- No list of facilities meeting the reporting requirements
- Developed a two stage reporting process
  - Registration began February 1st
  - Reporting application available March, 2005
- Need to dynamically assign unique facility identifiers
  - Allows registration and reporting in a single session
- Security feature to prevent automated registration
- Registration information transferred to reporting application

Save and resume

- Information from partially completed questionnaires encrypted and transmitted
- Encrypted information stored in a database in XML format
- Reporter resumes the session using the password *they* created
- Information is decrypted on the client's browser
- Questionnaire is repopulated

Automatic calculation of totals

- Client side calculation of CO_2 equivalents using Javascript



Total Stationary Combustion Emissions

	N/A	Tonnes	Tonnes (in CO_2e)
Carbon dioxide (CO_2)	☐	12687	12687
Methane (CH_4)	☐	235	4935
Nitrous oxide (N_2O)	☐	48	14880
		total:	32502

Total Industrial Process Emissions

	N/A	Tonnes	Tonnes (in CO_2e)
Carbon dioxide (CO_2)	☑		
Methane (CH_4)	☐	253.8	5329.8
Nitrous oxide (N_2O)	☐	42	13020
		total:	18349.8

Total Fugitive Emissions

	N/A	Tonnes	Tonnes (in CO_2e)
Carbon dioxide (CO_2)	☐	0	
Methane (CH_4)	☑		
Nitrous oxide (N_2O)	☑		
		total:	

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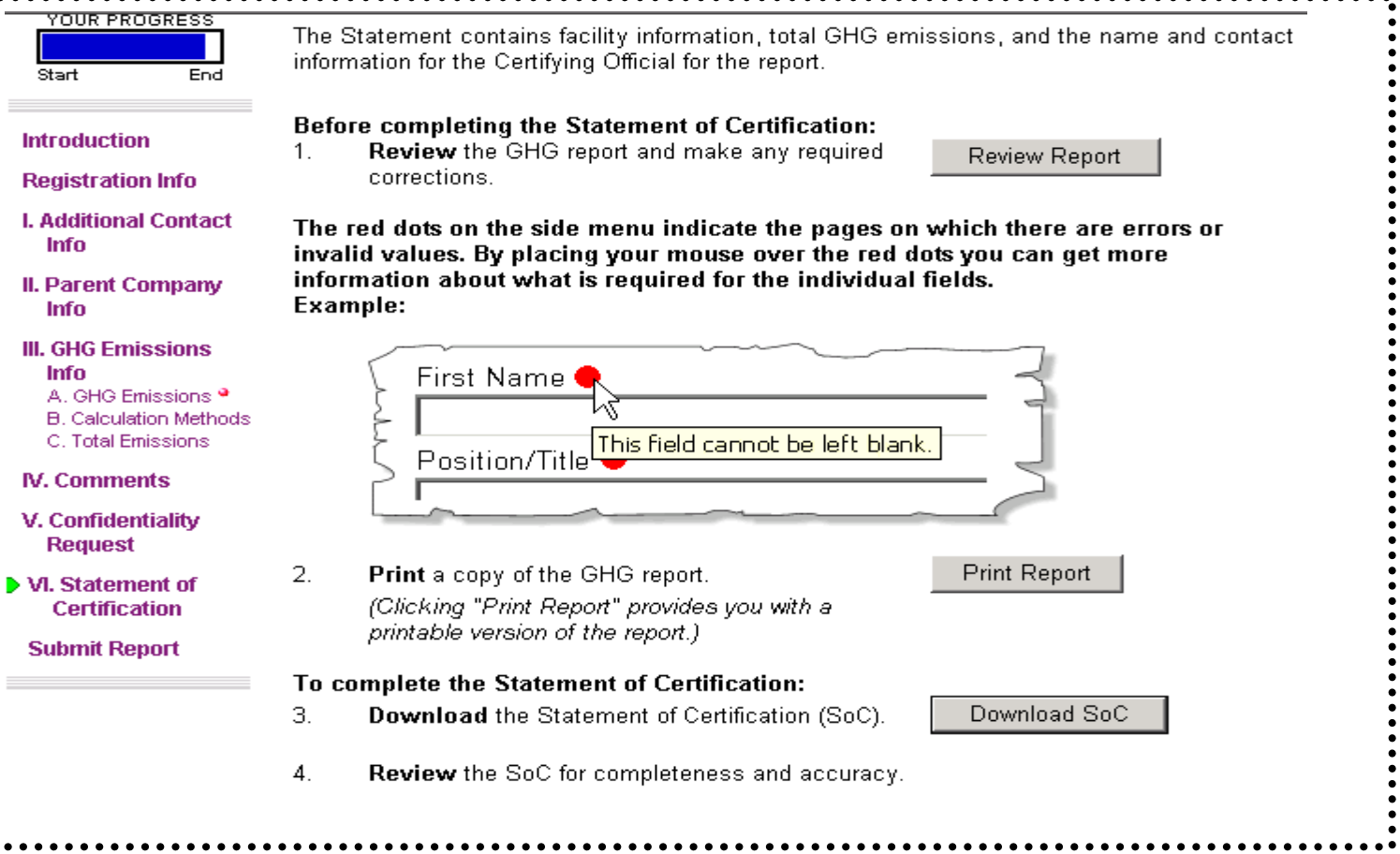
Data verification

- Reporters can review their report for missing fields



Non-repudiation

- PKI can support digital signatures
  - Business processes to confirm identity of reporters not in place
- Signed paper Statement of Certification used for non-repudiation in Phase One
  - Colleted information transferred from application into a printable HTML page

STATEMENT OF CERTIFICATION

For:

Facility ID : TES117

NPRI :

AB Approval No :

I hereby certify that I have reviewed the Greenhouse Gas report submitted, and have exercised due diligence to ensure that the submitted information is true and complete. The amounts and values (presented below) are accurate, based on reasonable estimates using available data.

I also acknowledge that the data will be made public.

SUMMARY OF THE DATA SUBMITTED

Greenhouse Gas	***Total Tonnes***	***Total Tonnes (in CO_2e)***
Carbon dioxide	CO_2	CO_2e
Methane	CH_4	CO_2e
Nitrous oxide	N_2O	CO_2e
Hydrofluorocarbons		CO_2e
Perfluorocarbons		CO_2e
Sulphur Hexafluoride	SF_6	CO_2e
Total Emissions		CO_2e
Carbon dioxide from biomass	CO_2	CO_2e

I, _____,[Certifying Official] have the authority to bind the reporting company.

_____ SIGNATURE OF CERTIFYING OFFICIAL

_____ DATE

Certifying Official
Name :
Position/Title :
Telephone : ()- Ext : Fax :()-

one Internet

Lessons learned

- Re-used as much of the existing EDR infrastructure as possible
- New development will be leveraged
- Prototype development approach
- Usability testing—two rounds
- Vulnerability—technological choices for security
  - Mitigation: Help line
  - Stakeholder involvement
  - Paper questionnaire (captured using EDR tool)
- The proof will be in the pudding (and there is always Phase Two)

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Contacts

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