First Gas

Tieto Oil & Gas Australia

Introductions

Agenda

Agenda

1. Tieto and their capabilities (10 mins)
    a) Who are we?
    b) Energy Components
2. First Gas Project (40 mins)
    a) Project timeframe
    b) Project Methodology
    c) Interfacing
    d) Testing Schedule
    e) Training
    f) Consultation Items
3. Questions and Answers

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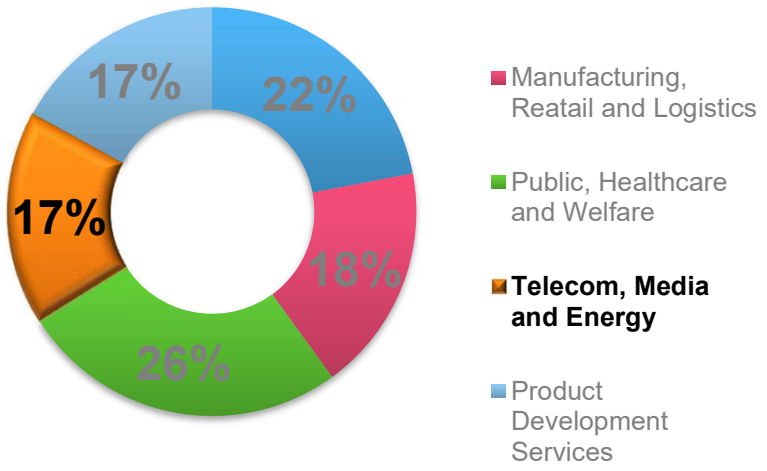
Who are we?

Tieto Corporate

Tieto Corporation

- Largest IT service company in the Nordics
- Provides full lifecycle services in IT, as well as product development, for private and public organizations
  - founded **1968**,
  - headquartered in Helsinki, **Finland**
  - approximately **14,000** employees
  - operates in over 20 countries
  - net sales at approx. **EUR 1.6 billion**

Sales by Industry



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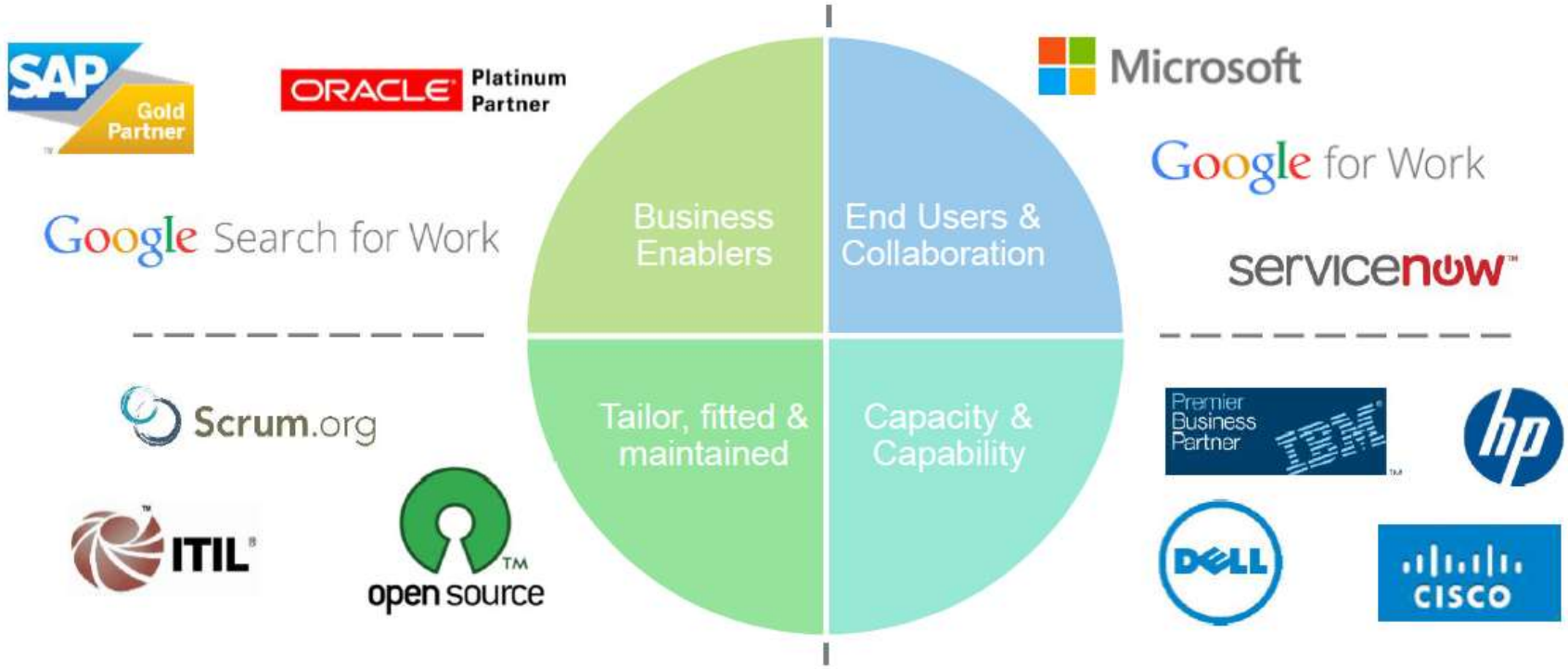
Tieto Technology Partners



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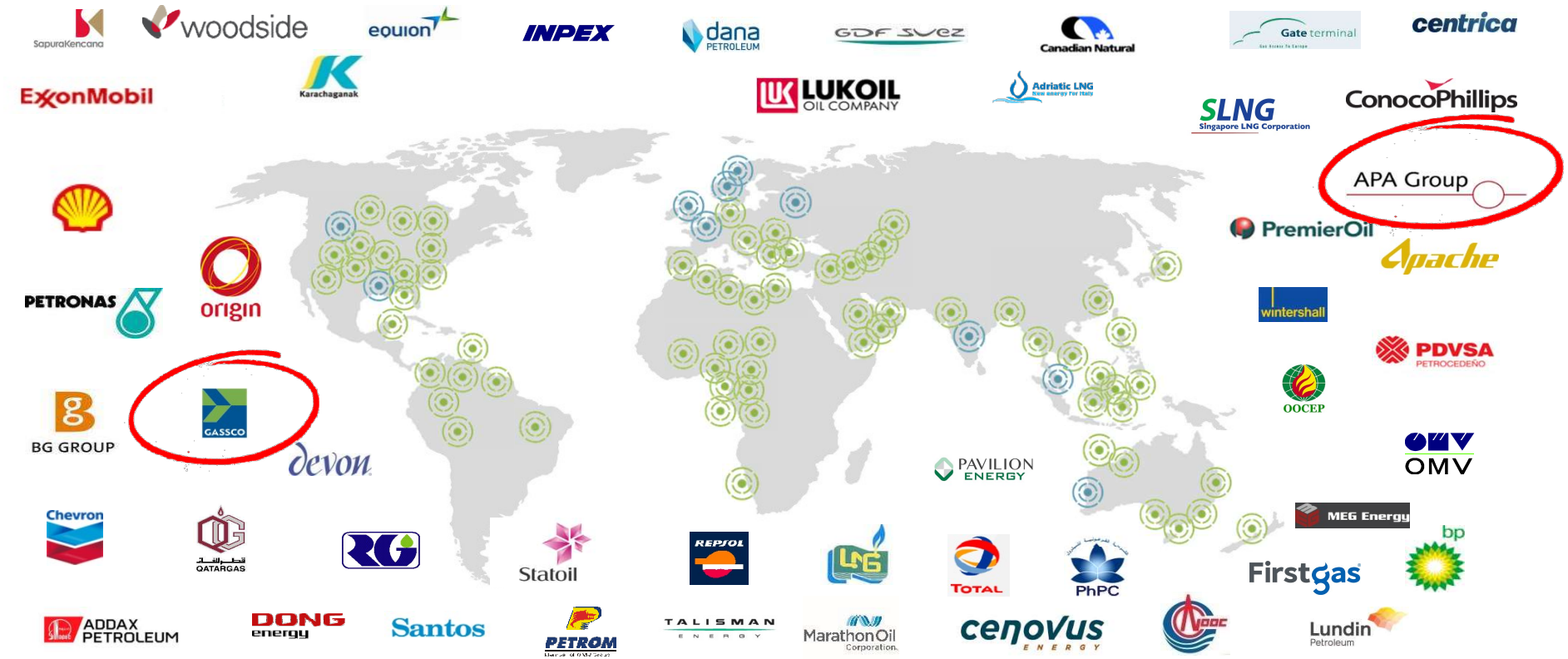
Tieto Oil & Gas - Worldwide



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Tieto Oil & Gas – Our Customers

Perth Office
- Opened 2013
- Brookfield Place
- 11 employees

Brisbane
- On-site with client
- 10 employees

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Products and Services

- Energy Components
  - ‘EC’
  - Hydrocarbon Management
  - Business consulting
  - Product development

- Personnel Transport Solution
  - ‘PTS’
  - Personnel on Board Mgt
  - Business consulting
  - Product development

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Our Experience - Gassco - Norway

- Customer since 2002
- Long standing consulting service being provided by Tieto

- 7,800km of natural gas pipelines across Norway
- One of the largest gas transport systems in Europe
- 15% of the total consumption of natural gas in Continental Europe is distributed through Gassco

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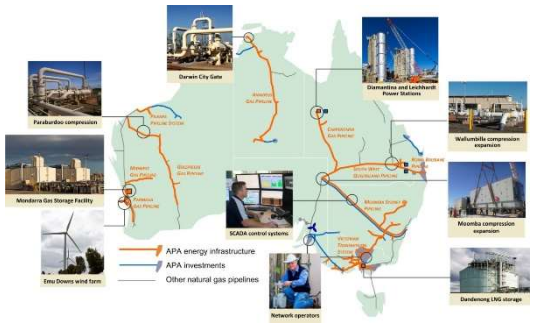
Our Experience - APA Group - Australia



- Customer since 2003
- Ongoing co-innovation project with Tieto

- 14,000km of natural gas pipelines across Australia
- Australia's largest transporter of natural gas, delivering approximately half of Australia's annual gas use through its infrastructure
- Customer Focus
  - Using one system
  - One primary contact
  - A common business support team
  - Creation of the Business to Business functionality (e.g. nomination interface)

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Energy Components

Hydrocarbon Management

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EC in Numbers

- Over **500** licenses of EC have been sold in close to 55 countries

- EC provides unprecedented support the **whole value chain**

- EC received the highest rating in ***"Fit to Market Needs"*** by IDC Energy Insights

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Energy Components

- EC provides **complete functionality** to transport natural gas from production sites by pipelines to the consumer markets
- EC includes all features of **nomination** management, **balancing** services and **revenue**
- EC supports the **full hydrocarbon management value chain**

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Energy Components

- **Flexible** and configurable
- Monitoring and **reporting** every **hydrocarbon produced**, **transported** and **sold** to accurately determine the value of the gas from different sources
- Full **traceability**
- **Auditability**
- SOX404 **compliance**

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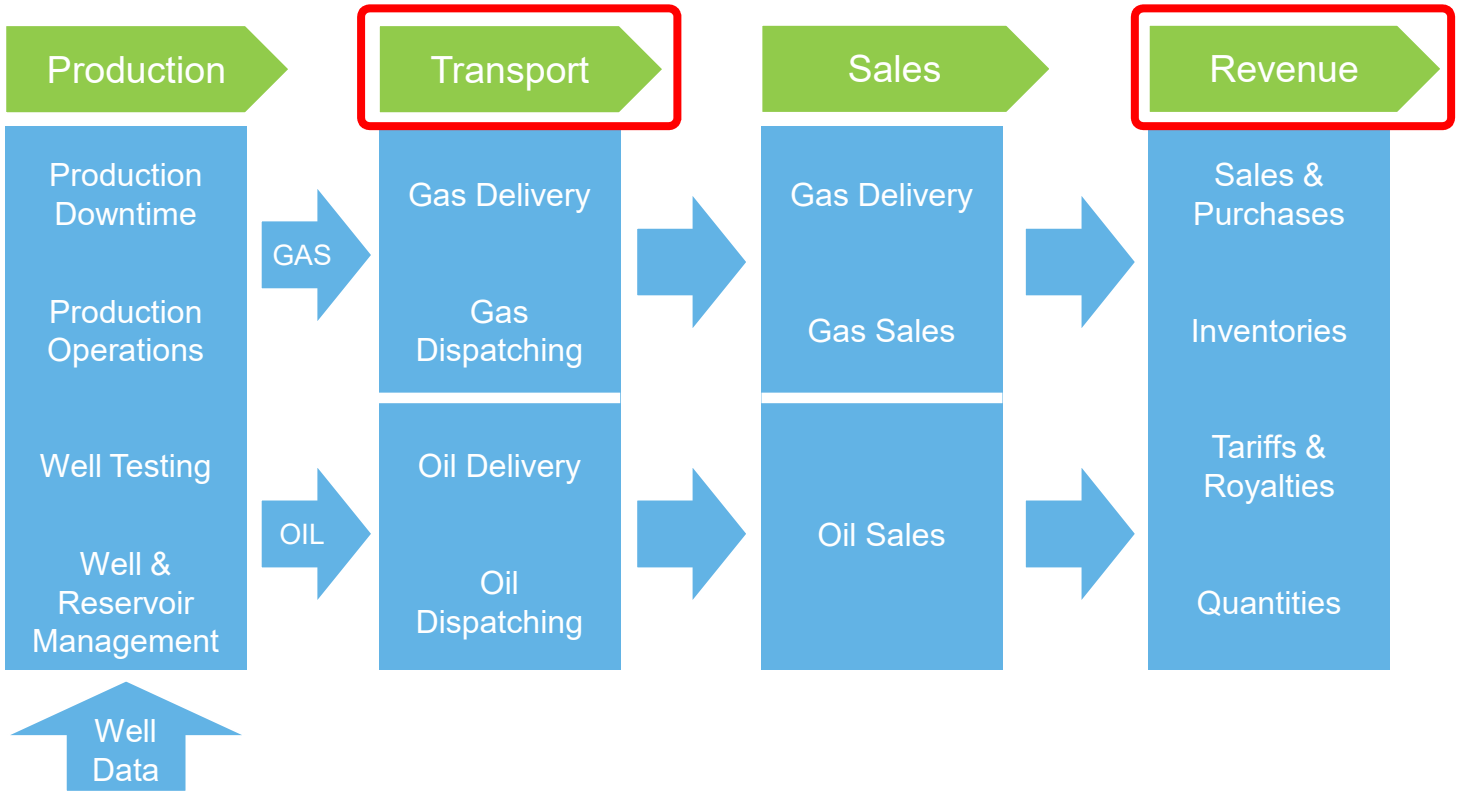
EC Functionality / Modules



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Transport & Revenue Modules

- **Complete set of functionality** to cope with all types of transport requirements
- Developed to handle tasks, for example;
  - **Nomination** management
  - Assess available **capacity** against **aggregate nominations** at each network point
  - **Curtailment** management
  - Gas storage and **balancing**
  - Store and use gas **quantity and quality measurements**
  - **Allocation** and reconciliation of all data at periodical intervals
  - Calculate **tariffs** and **fees**
  - Submit **invoices** / statements and integrate with financial accounting system
  - Regulatory **reporting**

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EC in Numbers

- More than **20%** European gas consumption distributed through pipeline transportation systems is managed by EC
- Over **7,800km** of pipelines and 100+ bln m^3 gas volumes are transported annually under EC control

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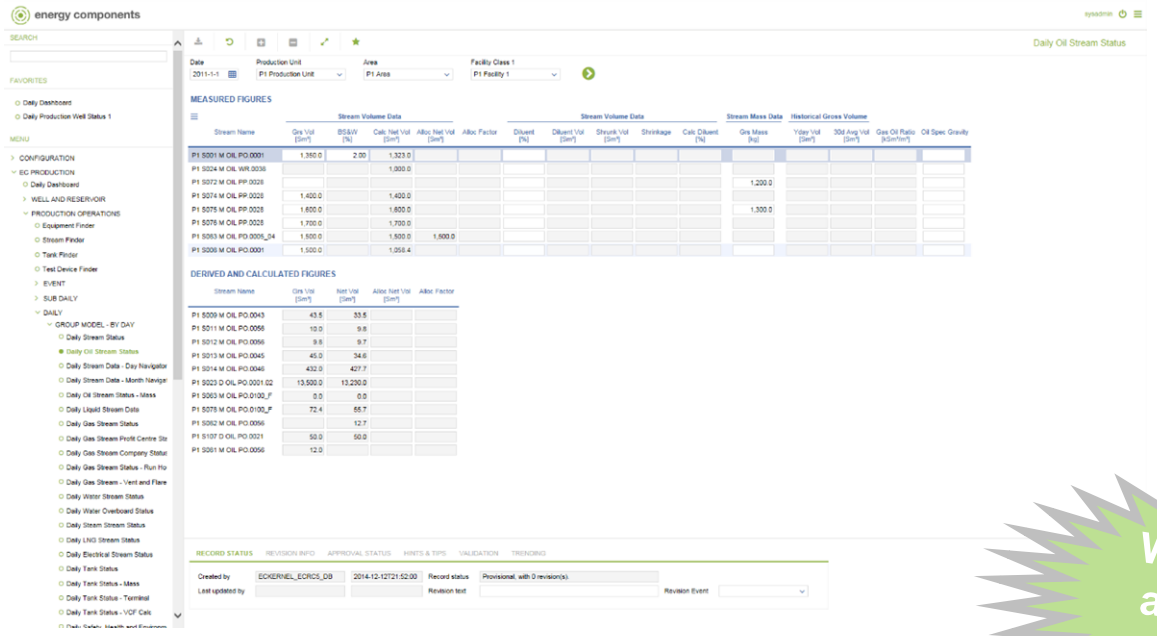
Typical EC Screen



Web based access via browser

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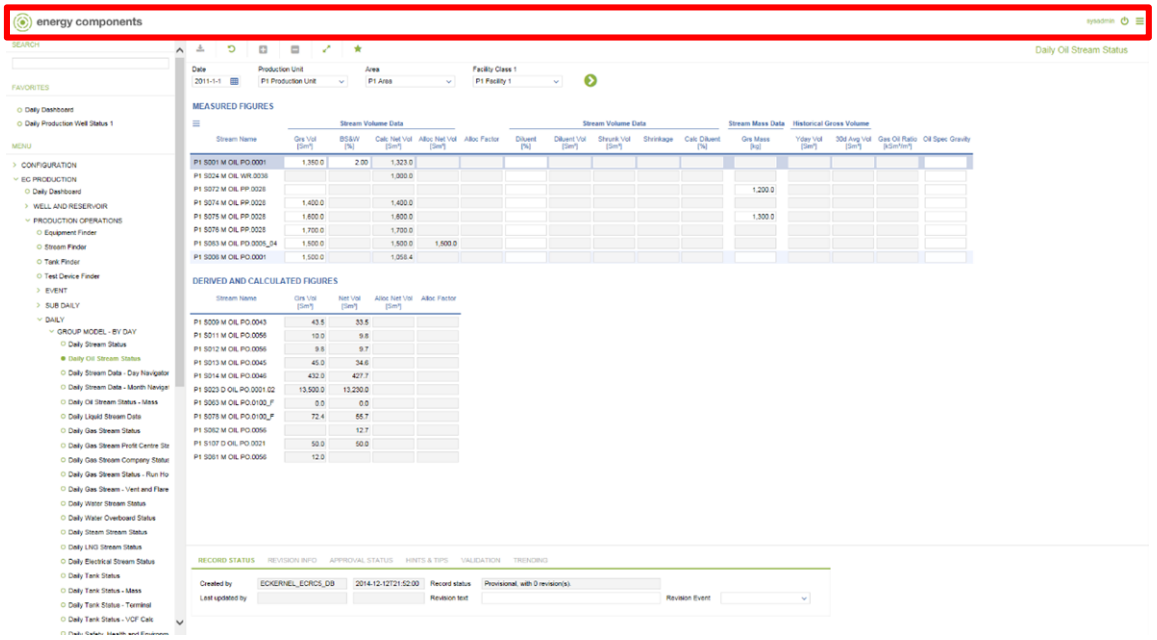
Screen Bar



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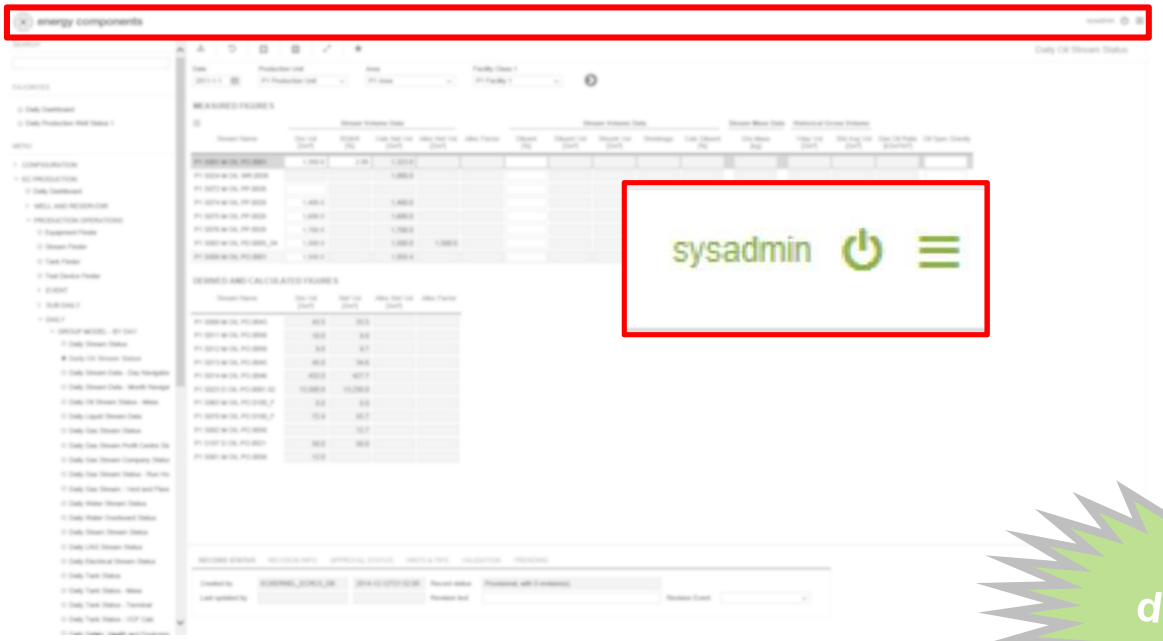
Screen Bar



User details and help

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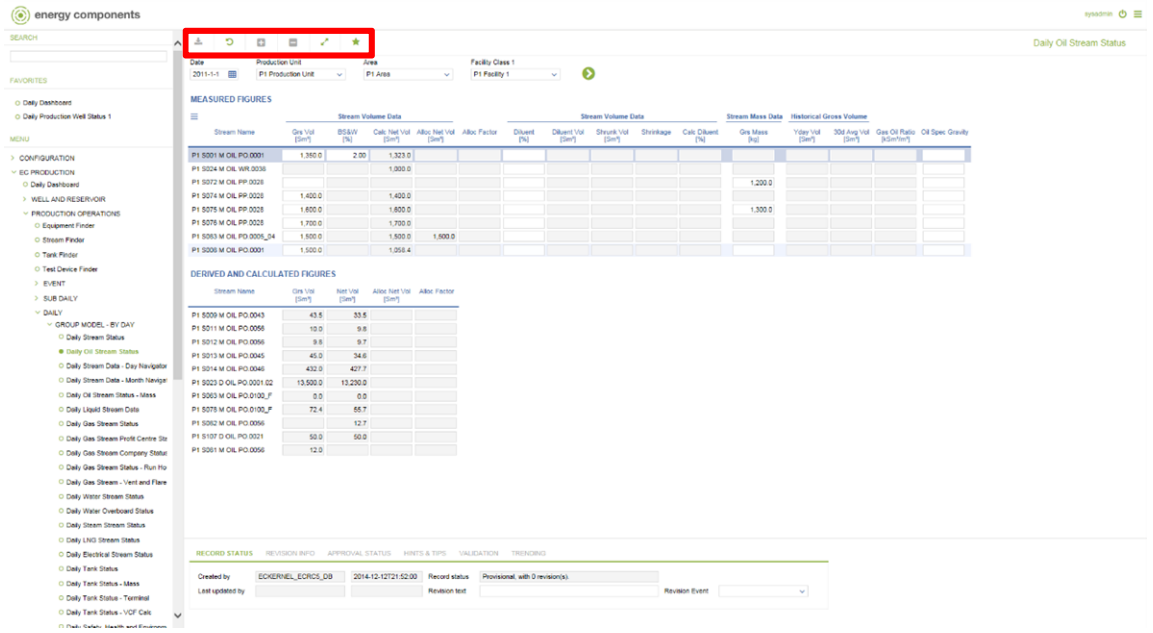
Toolbar



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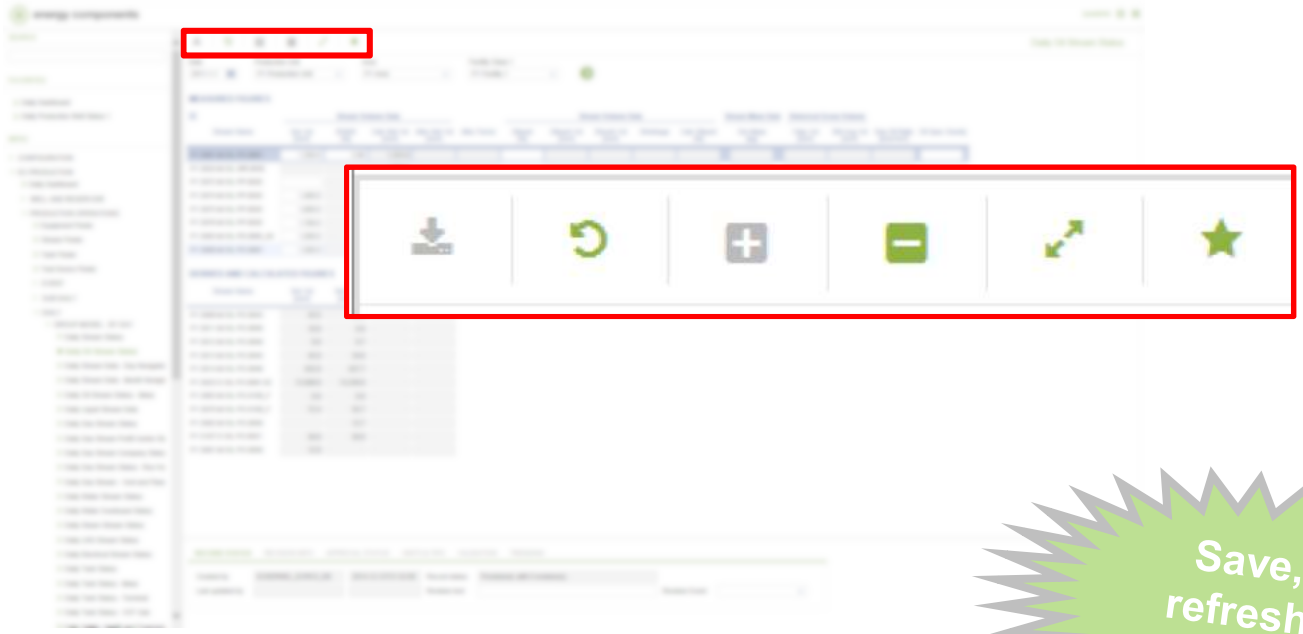
Toolbar



Save, refresh, add, delete

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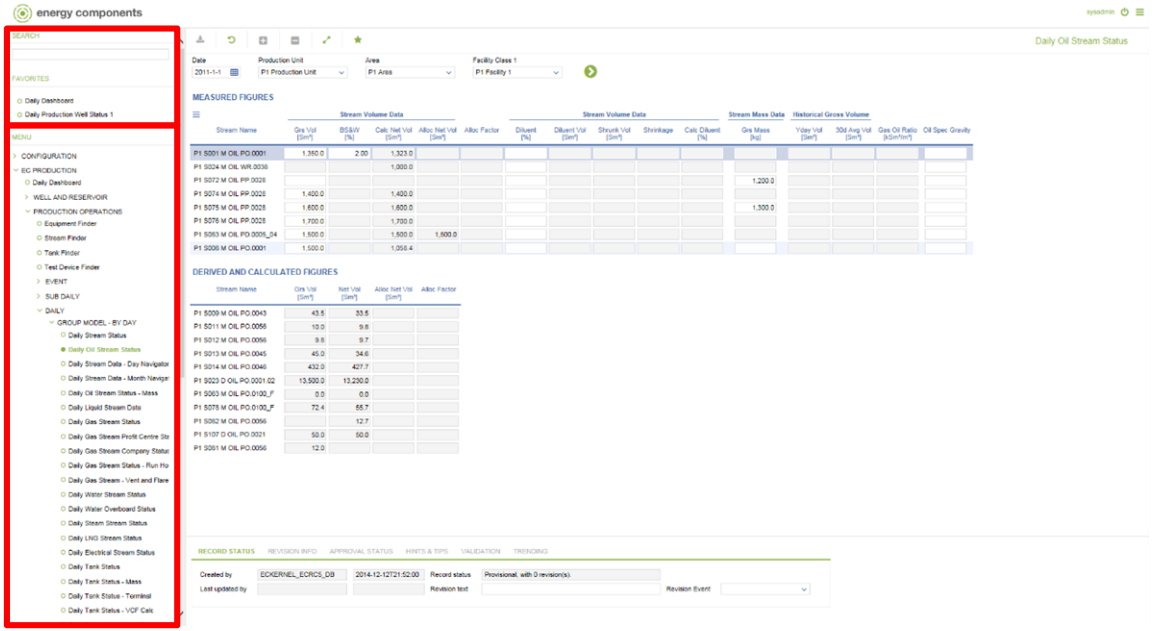
Tree View



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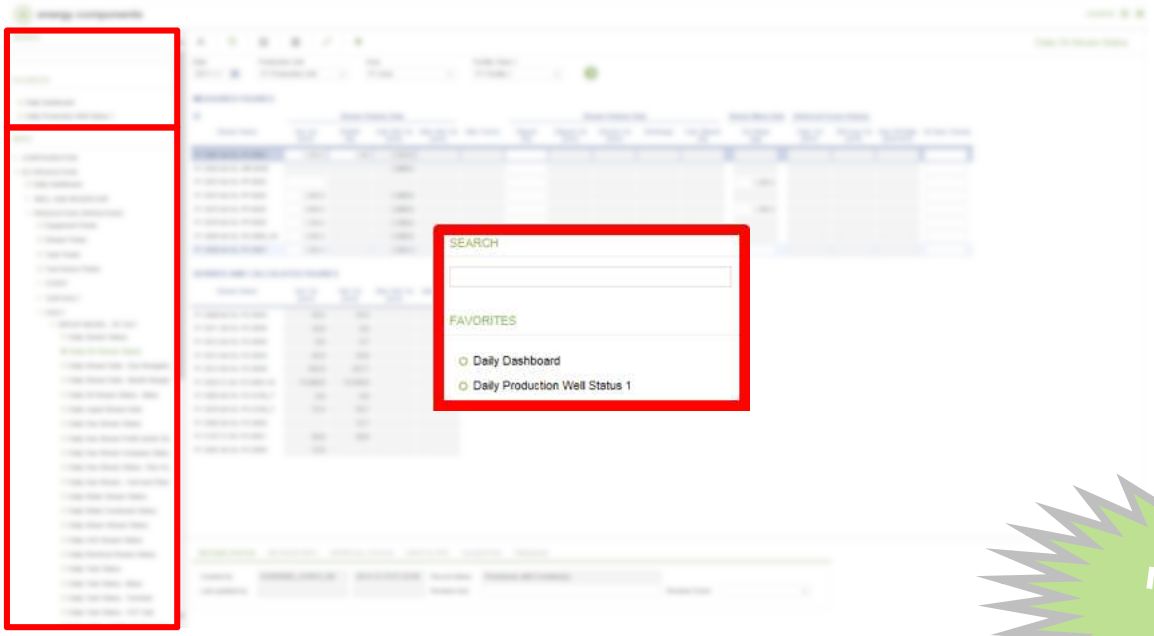
Tree View



Screen navigation and favourites

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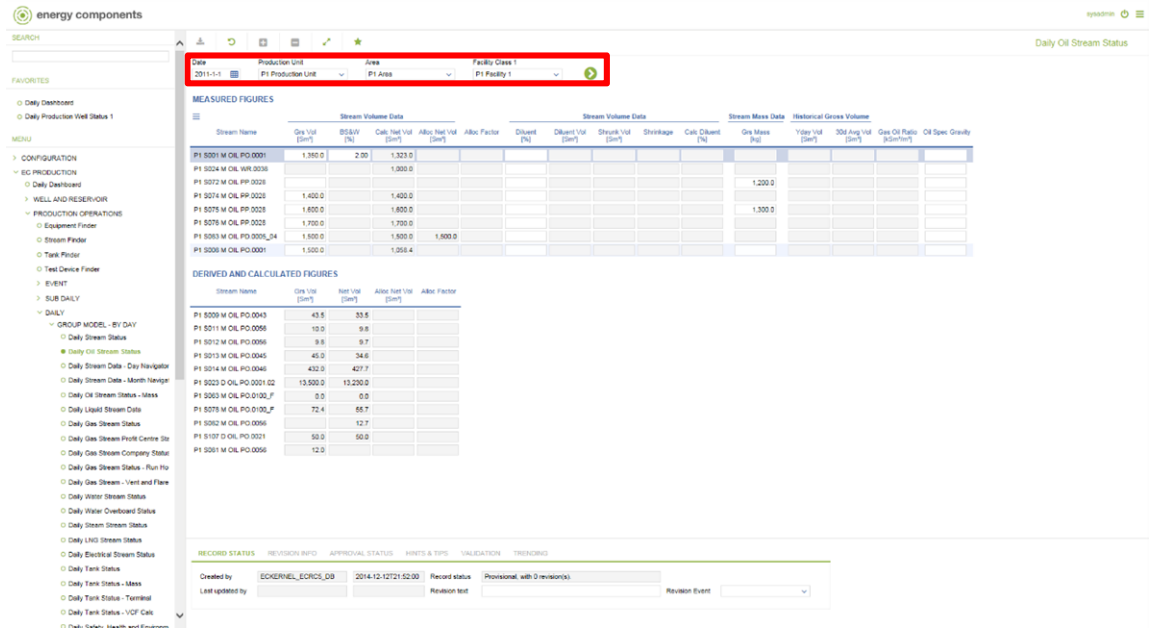
Navigator Pane



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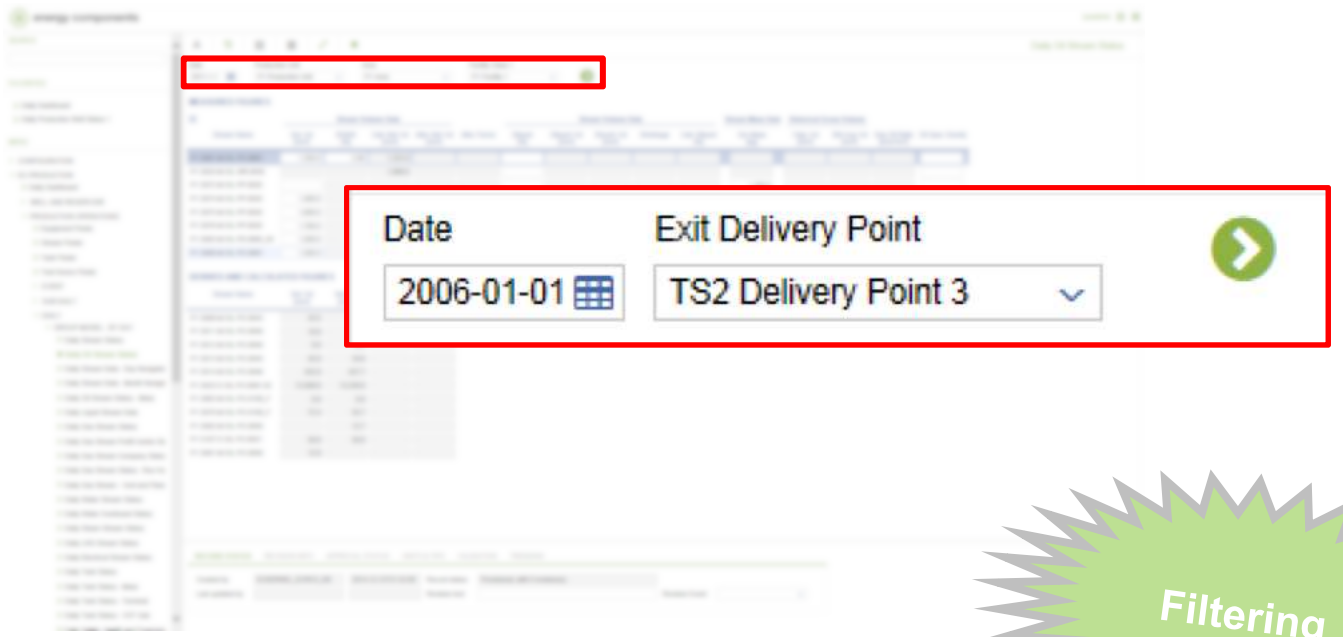
Navigator Pane



Filtering

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Data Window

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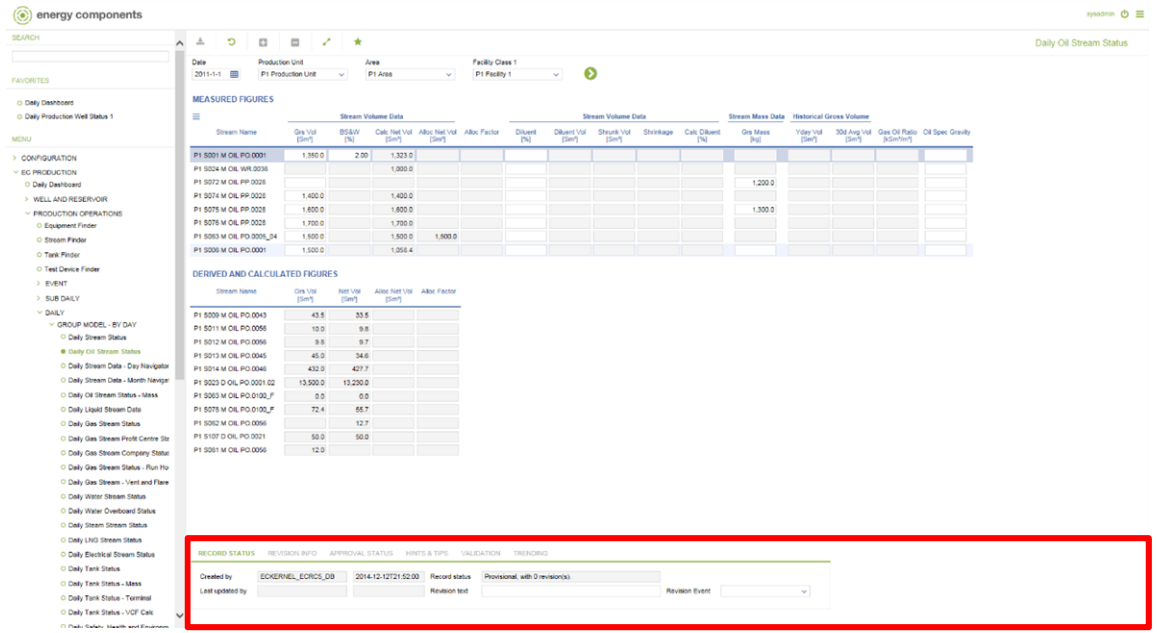
Status Area



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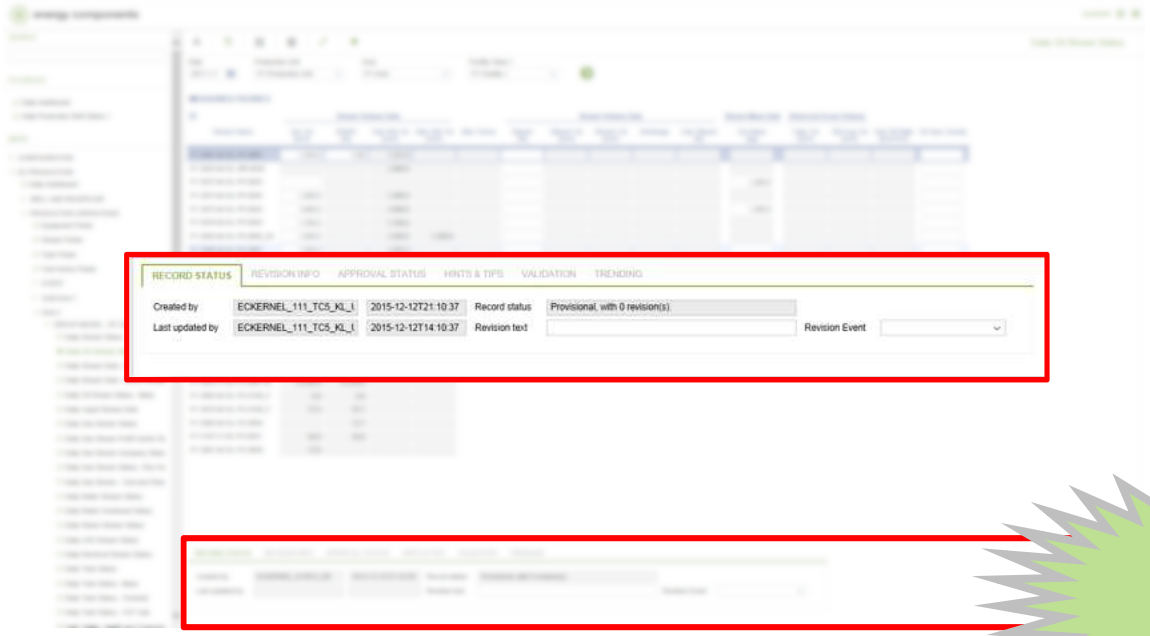
Status Area



Revision history, hints, trending

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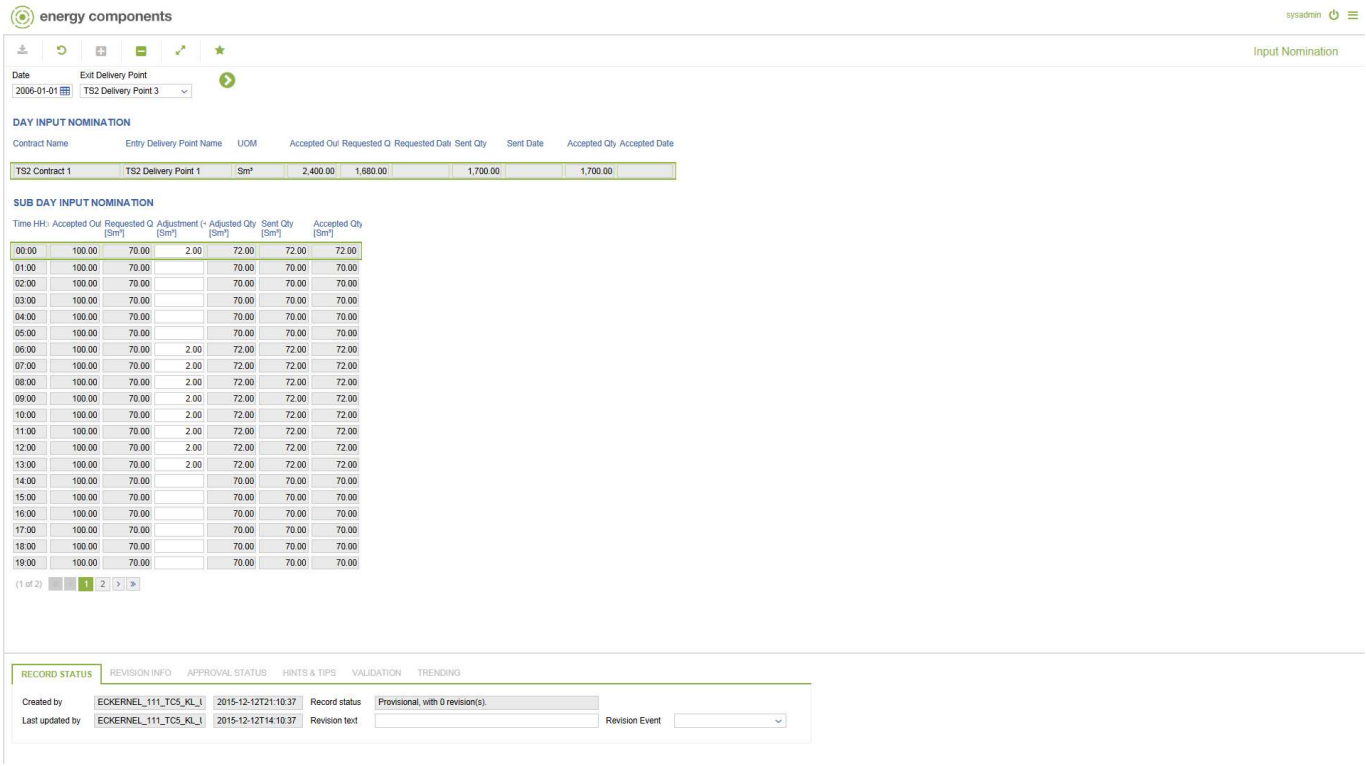
Input Nomination Screen



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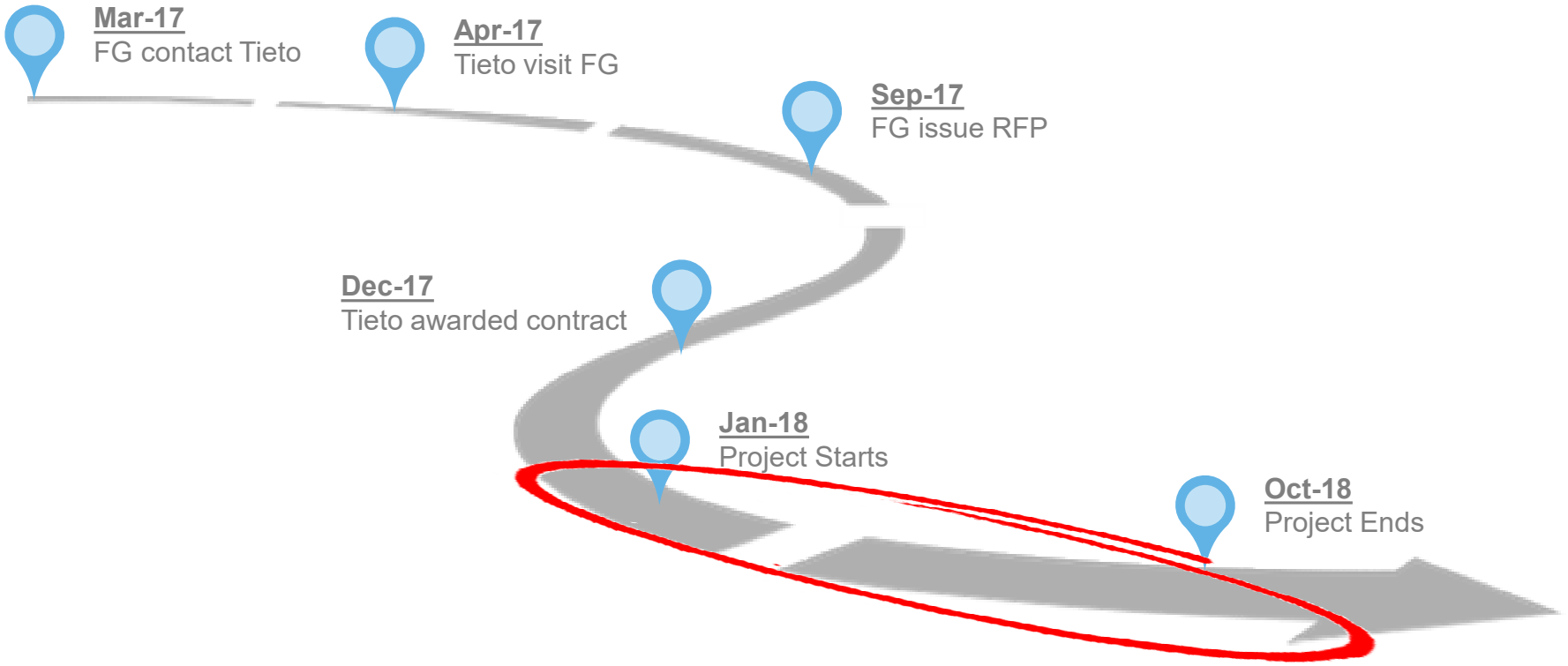
The First Gas Project

Project Timeframe

Timeline Summary



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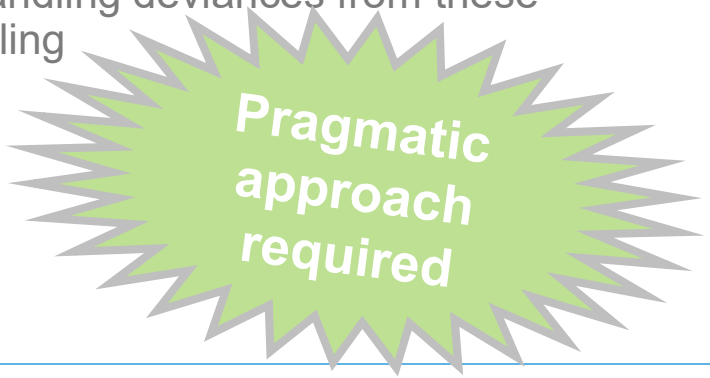
The First Gas Project

Project Methodology

The Project – Guiding Principles

1. **Use of EC's standard configuration over timely customisations**
   - This may mean FG having to adopt and adapt to best practice processes inherent in EC
2. **Availability of all project members**
   - This is to ensure requirements and solutions are defined in a timely and adequate manner
3. **Efficient Project Management**
   - Accurate tracking of time, cost and scope and handling deviances from these appropriately through prioritisation and rescheduling



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The ‘Tieto Way’ Methodology

- Proven methodology
- 8 phase ‘waterfall’ approach, consisting of the following phases
  - PRE – Pre-Study
  - PFA – Product Fit Analysis
  - PCI – Product Configuration
  - ST – System Test
  - FAT – Factory Acceptance Test (not applicable in this project)
  - SAT – Site Acceptance Test
  - CS – Commissioning & Support
  - PC – Project Close

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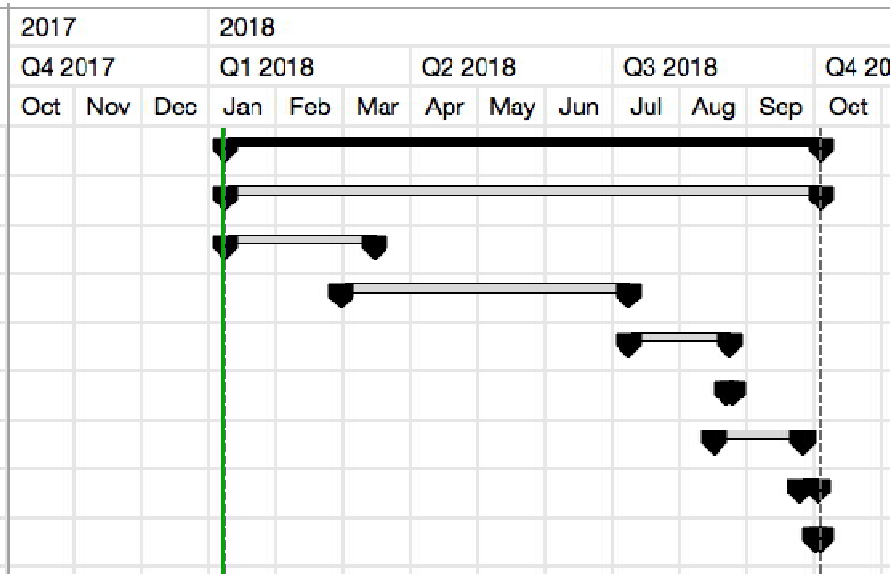
The ‘Tieto Way’ Methodology

Name	Work
First Gas GTAC	9,600 h
Project Management (PM)	1,164 h
Product Fit Analysis (PFA)	1,176 h
Product Configuration & Integration (PCI)	4,080 h
System Test (ST)	1,600 h
Factory Acceptance Testing (FAT)	0 h
Site Acceptance Testing (SAT)	1,300 h
Commissioning & Support (CS)	280 h
Project Closure (PC)	0 h



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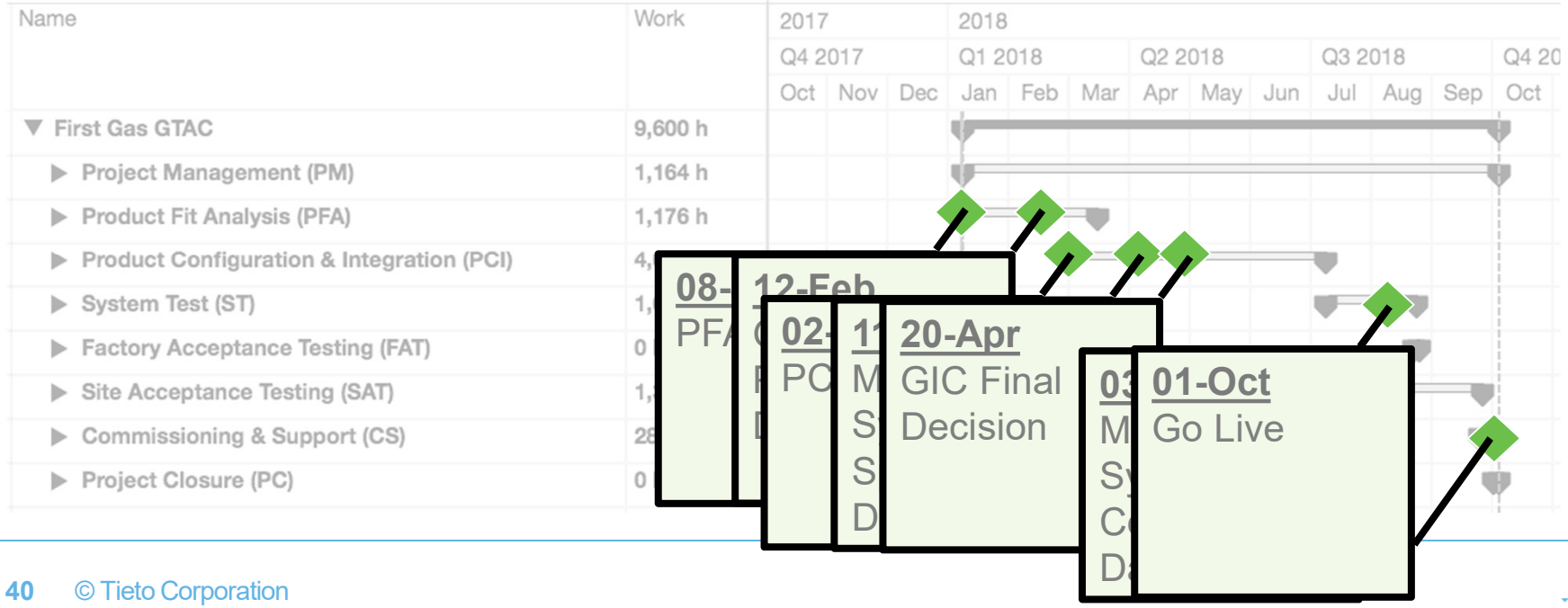
The ‘Tieto Way’ Methodology

PRE | PFA | PCI | ST | FAT | SAT | CS | PC



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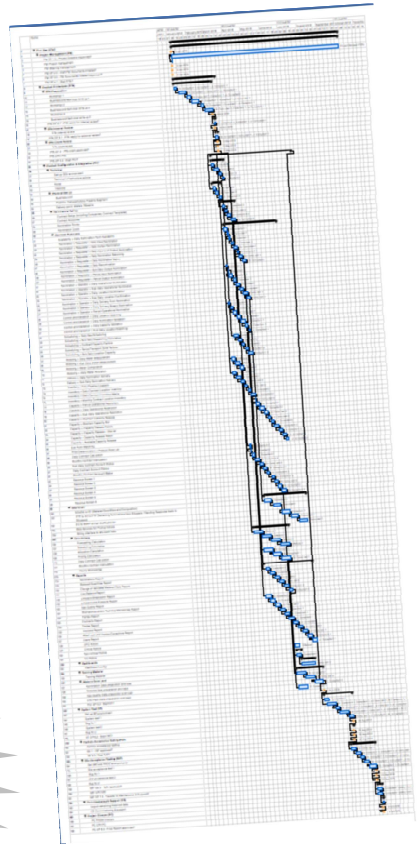
Phases Dates & Detail

Name	Work	Duration	Start	Finish
▼ First Gas GTAC	9,600 h	194 d	8 Jan 2018	4 Oct 2018
▶ Project Management (PM)	1,164 h	194 d	8 Jan 2018	4 Oct 2018
▶ Product Fit Analysis (PFA)	1,176 h	49 d	8 Jan 2018	15 Mar 2018
▶ Product Configuration & Integration (PCI)	4,080 h	92 d	2 Mar 2018	9 Jul 2018
▶ System Test (ST)	1,600 h	33 d	10 Jul 2018	23 Aug 2018
▶ Factory Acceptance Testing (FAT)	0 h	0 d	23 Aug 2018	23 Aug 2018
▶ Site Acceptance Testing (SAT)	1,300 h	27.5 d	17 Aug 2018	25 Sep 2018
▶ Commissioning & Support (CS)	280 h	5 d	25 Sep 2018	2 Oct 2018
▶ Project Closure (PC)	0 h	1 d	2 Oct 2018	3 Oct 2018



Our schedule is based on detailed assumptions

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The First Gas Project

Interfacing

Interfacing

- There are a number of methods of interfacing
  - Direct screen entry
  - Web Services
- As part of the PFA phase we will specify the format of these interfaces
- This will then allow you to make changes within your own applications
- Details to be shared by 11-Apr

Where possible, existing logic will be maintained

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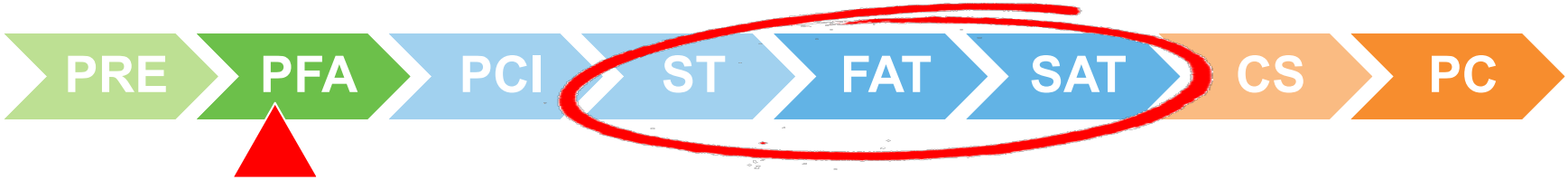
The First Gas Project

Testing Schedule

The ‘Tieto Way’ Methodology



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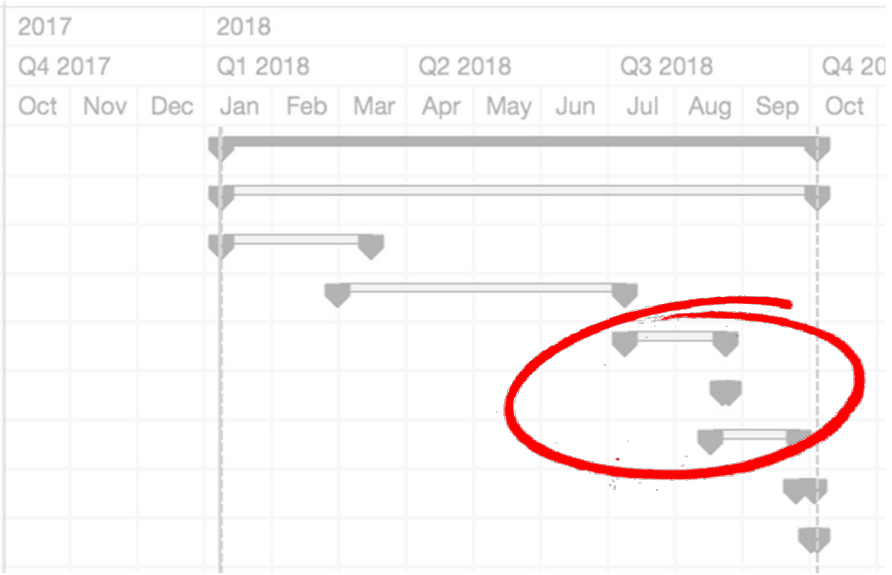

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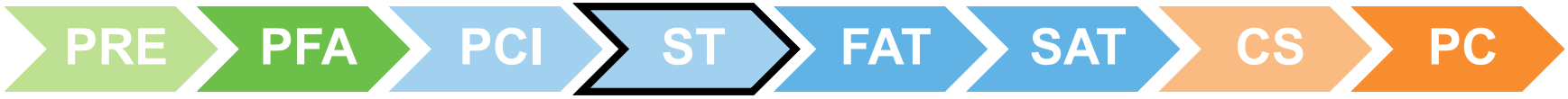
System Test



- **10-Jul to 23-Aug**
- Tieto responsibility
- Undertaken on Tieto premises
- Carried out against an agreed acceptance test specification (PFA Processes)
- Test preparation, loading of test data, perform system test (end-to-end internal testing of the configured solution), prepare documentation, possible rework, etc.
- Typically stop start, first attempt at a run through of end-to-end processes and configuration

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Factory Acceptance Test

- Not included in this project

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Site Acceptance Test

- **17-Aug to 25-Sep**
- Customer's responsibility to resource and test the product
- Undertaken on customer's premises
- This is the customer's opportunity to assure that the System functions according to the specification
- Tieto shall support this phase with assistance to the customer

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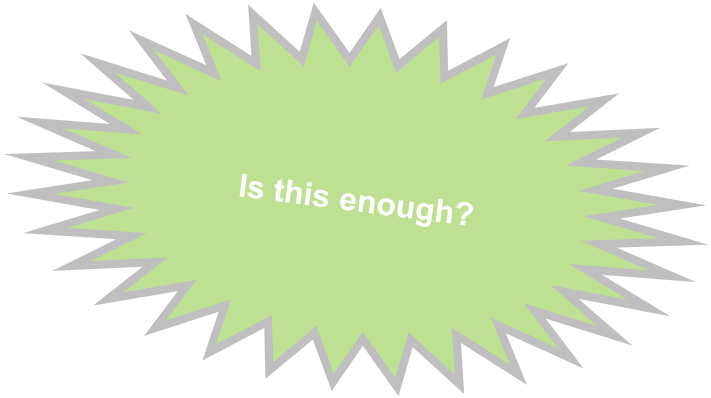
The First Gas Project

Training

Train the Trainer

- Tieto will be producing a user guide document on how to undertake the requested business processes using EC
  - This will take the form of annotated screenshots
- First Gas have selected a train the trainer approach
  - No classroom training scheduled
- SAT will be an opportunity to learn



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The First Gas Project

Consultation Items

Consultation Items

1. Are nominations to be provided per zone/point or both? [Ref:021,022]
2. Do shippers require to distinguish nomination between the same TSA (multiple contract IDs under the same TSA)? [Ref:024]
3. Do shippers require a priority to be assigned to nominations? [Ref:052]
4. What data should be made available to Shippers, for example, Hrly GJ, Temp, Press, CV, UCTOT, CTOT, CORR etc. [Ref:068]
5. How many decimal places should reports to shippers contain? [Ref:071]

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Thank you

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Changing perspectives™

Ref 022

Ref. 022 – Are there benefits to allow nominations to points belonged to a zone be entered or should points that belong to a zone not be allowed to receive nominations? Point 1 on example below.

Example: A shipper may send the following:

Date	Contract	Location	Nominated Quantity
12/Feb/2018	1020	Zone A	10,000
12/Feb/2018	1020	Point 1	1,000
12/Feb/2018	1020	Point 20	5,000
12/Feb/2018	1020	Point 30	2,000

Note: Point 1 belongs to Zone A, Point 20 belongs to Zone C, Point 30 is dedicated OBA

For the GTAC, this means:

Date	Location	Nominated Quantity
12/Feb/2018	Zone A	11,000
12/Feb/2018	Zone C	5,000
12/Feb/2018	Point 30	2,000

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Ref 024

Ref. 024 - Do shippers require to distinguish nomination between the same TSA (multiple contract IDs under the same TSA)?
Example: A shipper may send the following:

Date	Contract	Contract Type
12/Feb/2018	1020	TSA
12/Feb/2018	1020	TSA
12/Feb/2018	1025	TSA
12/Feb/2018	1030	Interruptible Agreement

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Ref 055

Ref. 055 – The priority field for shippers to indicate priority per nomination (1 is high), does it match the expectations?

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