



Introduction to the ICAO Fuel Savings Estimation Tool



- Need by States to compute the fuel savings from operational improvements
- Previous ICAO guidance - Rules of Thumb (2006)
 - Avg. fuel burn per minute
 - Avg. fuel burn per nautical mile
 - Avg. fuel burn per change in flight level
 - Better suited for assessing changes in cruise (e.g. RVSM)



- Allows those States without modelling and/or measurement capabilities to estimate fuel savings from operational improvements
- Consistent with CAEP-approved GHG models
- Consistent with Global Plan
- Easy-to-use / minimal data requirements
- Better than the Rules of Thumb



- The tool can estimate:
 - Effects of shortening / eliminating level segments on departure and approach
 - Effects of shorter routes (either in time or distance)
 - Effects of cruising at different altitudes
 - Effects of reduced taxi times



- **The tool does not:**
 - Replace detailed modelling or measurement of fuel consumption
 - Estimate fuel consumption from airborne holding
 - Compute emissions other than fuel consumption





- **AEDT** (CAEP-approved GHG model) used to pre-compute
 - Level, (steady state) climb, and (steady state) descent fuel consumption
 - By aircraft category
 - In 1,000 foot intervals

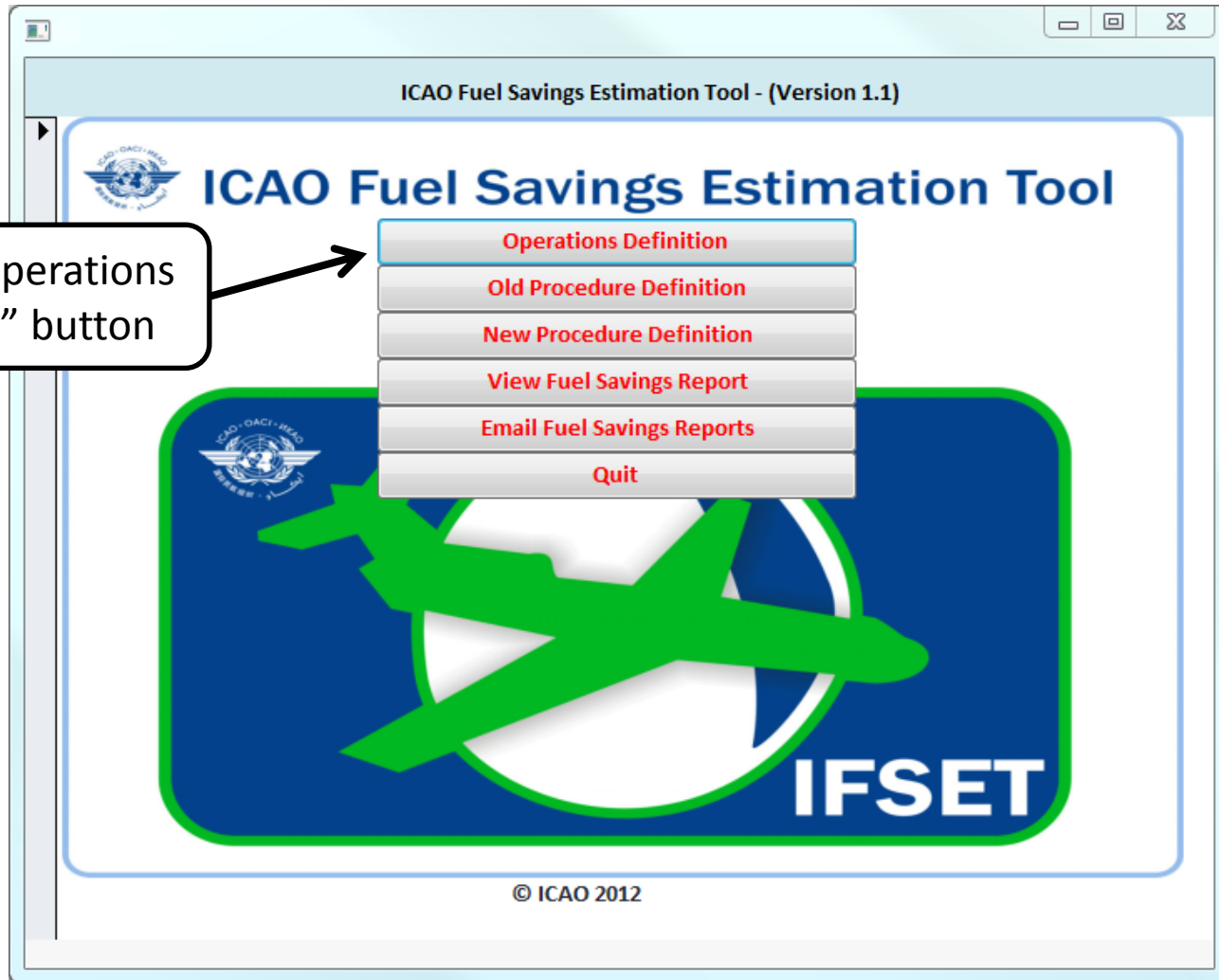


- Fleet mix defined for baseline and post-implementation scenario
 - Aircraft category
 - Aircraft remaining trip distance (optional parameter that will increase accuracy for departures)
- User selects “elements” to define the baseline and “new” procedure
- Tool estimates the change in total fuel consumption between the 2 scenarios





Click on "Operations Definition" button





STEP 1 - OPERATIONS DEFINITION
© ICAO 2012

Scenario Name:

Aircraft	Base Flights	New Flights	Continuing Old Flights	Remaining Trip (nm)
Single Aisle Jet	400	400		
Regional Jet	50	50		
Large Business Jet	30	30		
Small Business Jet	20	20		

No Filter

1. Enter a scenario name

2. Choose aircraft types and enter flight information

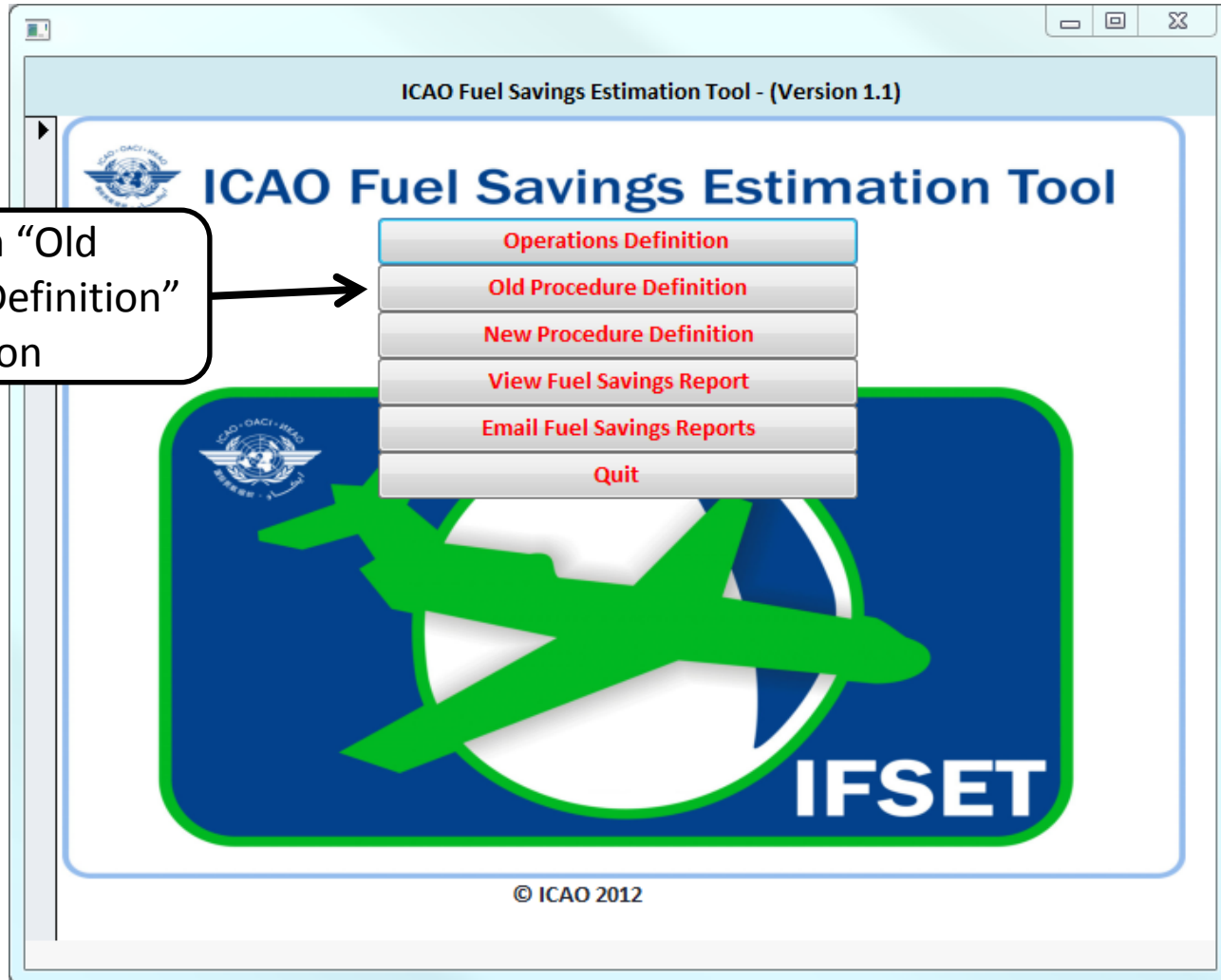
3. Click on "Save" button

4. Click on "Return" button





Click on "Old Procedure Definition" button





STEP 2 - OLD PROCEDURE DEFINITION
© ICAO 2012

Scenario Name

Action	From Alt(ft)	To Alt(ft)	Distance(nm)	Time(sec)
Climb	3000	7000		
Level	7000	7000	5	
Climb	7000	14000		
Level	14000	14000	5	
Climb	14000	31000		

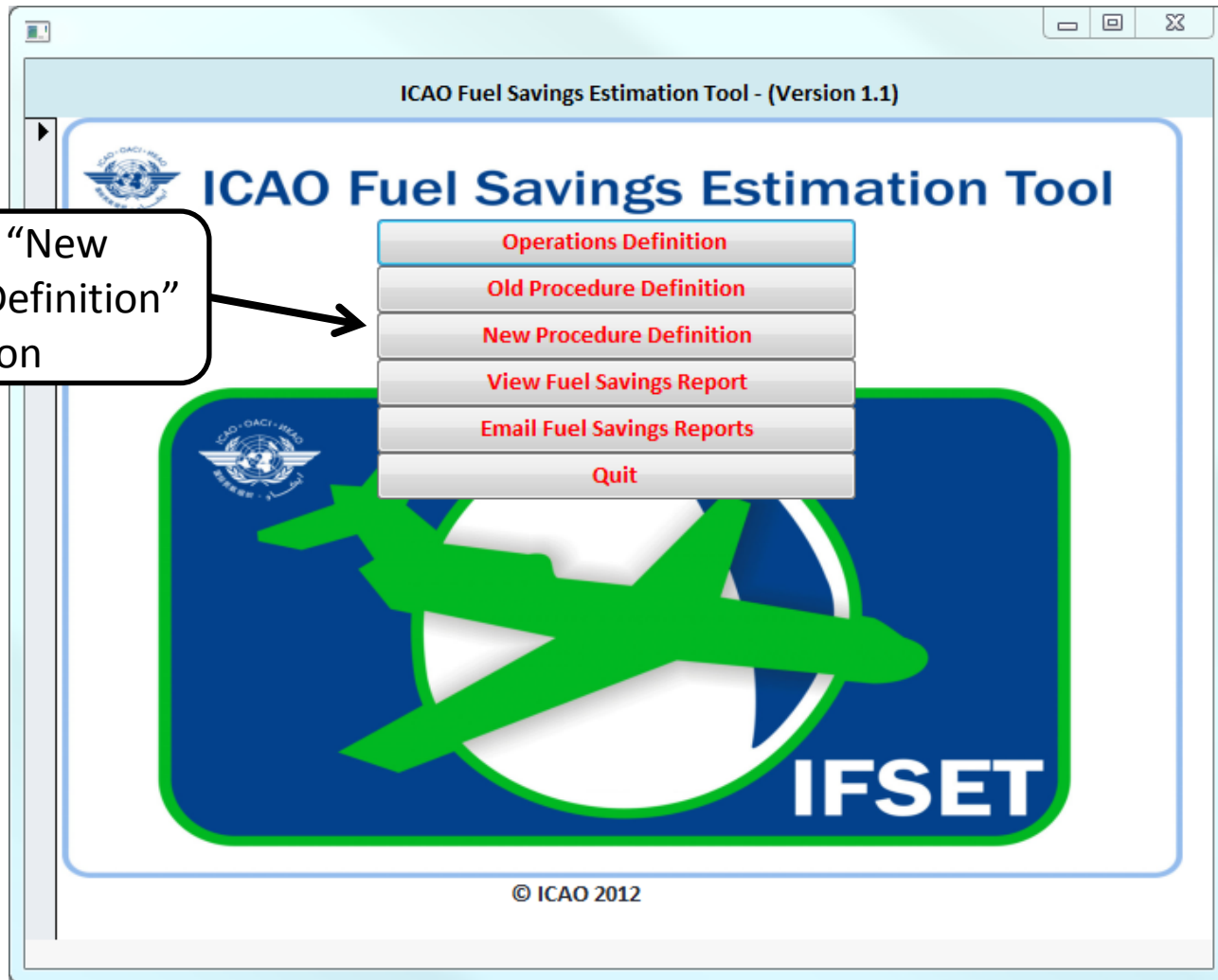
1 of 1 | No Filter | Search

1. Enter Old parameters

3. Click on "Return" button

2. Click on "Save" button





Click on "New Procedure Definition" button



STEP 3 - NEW PROCEDURE DEFINITION

© ICAO 2012

Scenario Name

Action	From Alt(ft)	To Alt(ft)	Distance(nm)	Time(sec)
<input type="text" value="Climb"/>	<input type="text" value="3000"/>	<input type="text" value="31000"/>	<input type="text"/>	<input type="text"/>
<input type="text" value="Level"/>	<input type="text" value="31000"/>	<input type="text" value="31000"/>	<input type="text" value="10"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Record: 1 of 1 | No Filter | Search

1. Enter New parameters

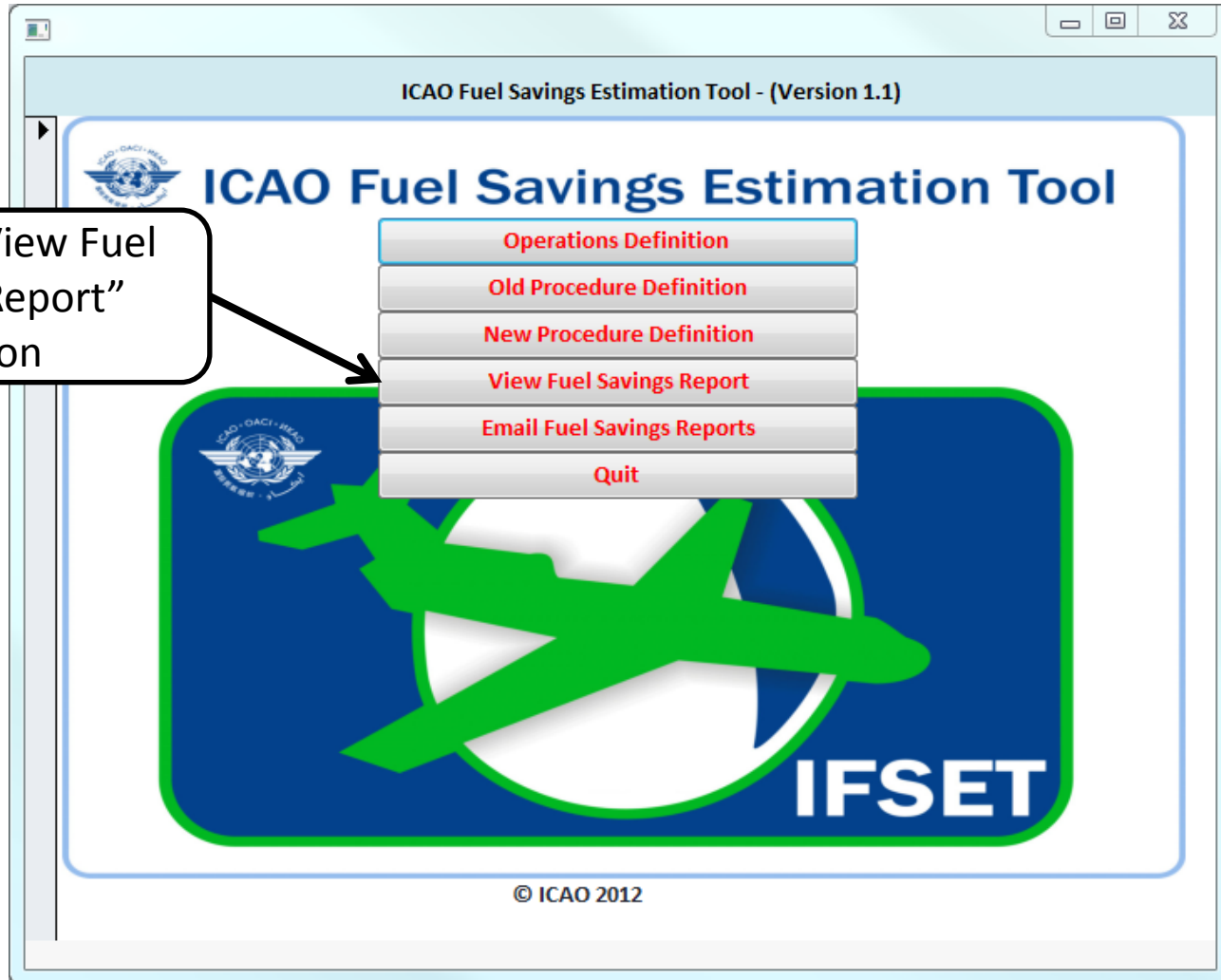
2. Click on "Save" button

3. Click on "Return" button



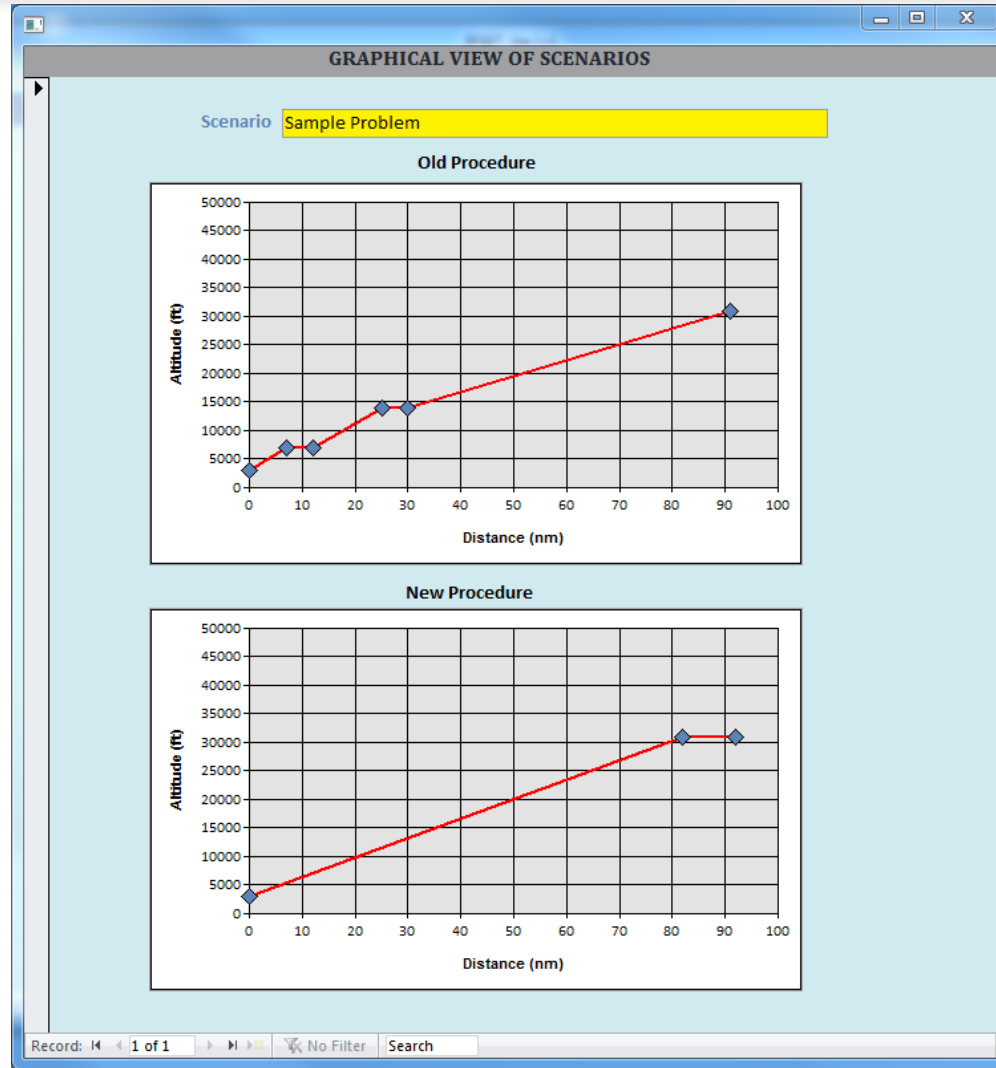


Click on "View Fuel Savings Report" button





Sample Graphical View





Estimated Fuel Changes Report

© ICAO 2012

Scenario	Old Fuel Consumption (Kg)	New Fuel Consumption (Kg)	Savings (Kg)	Savings (%)
Example Problem	498800	490800	-8000	-1.6

Note - Results are rounded to the nearest 100 Kg.

[Export to Excel](#)

[Detailed Fuel Savings Report](#)





ICAO

ENVIRONMENT

For More Information

All of the ICAO tools are available to the public from www.icao.int/env (click the “tools” button)

Try them out for yourself!

For more information on ICAO’s activities related to environmental protection, please visit our website

www.icao.int/env

