



# Parametric Estimation in 27 Steps

## Table of Contents

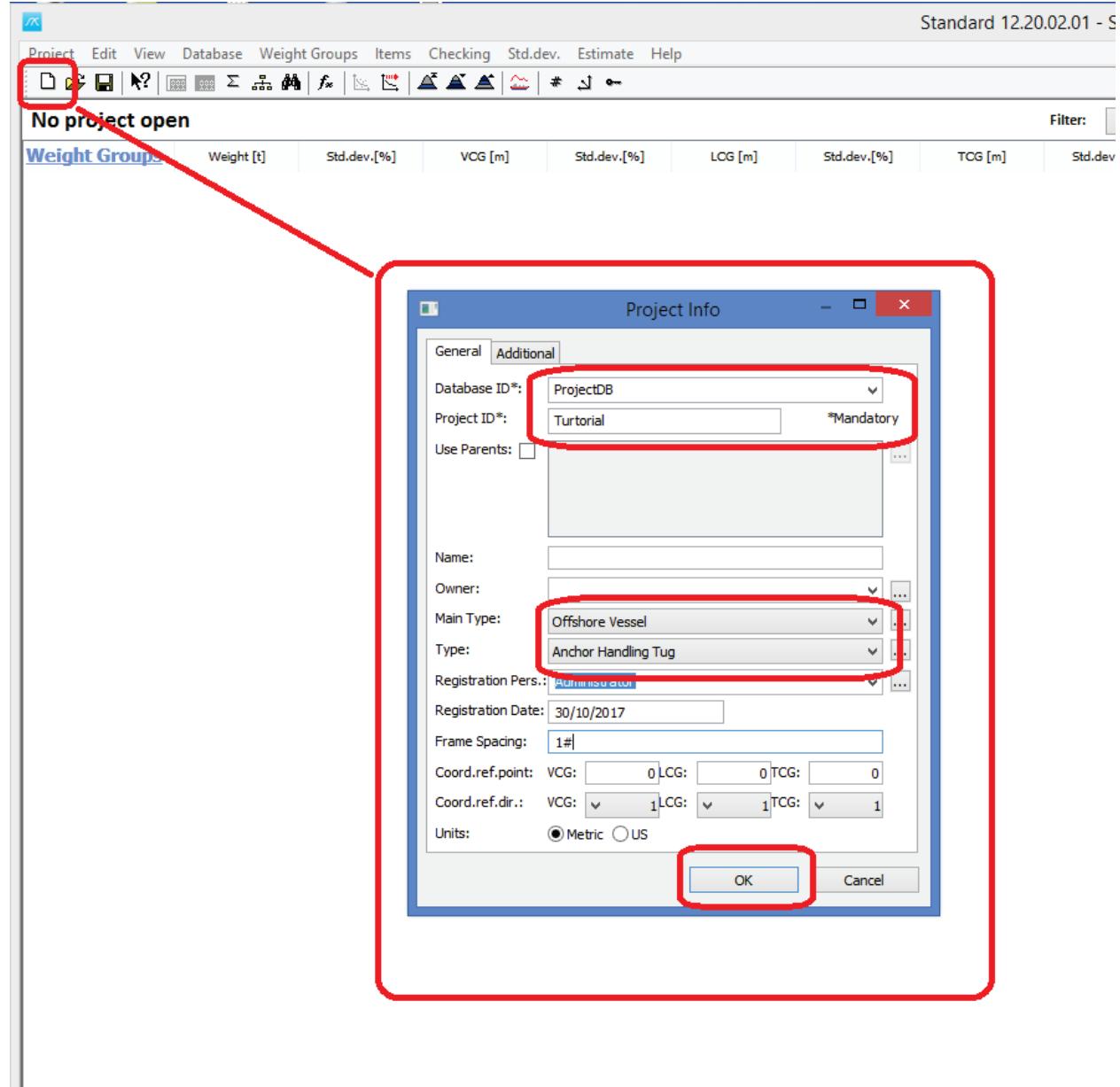
Step 1: Start ShipWeight and Log on .....	2
Step 2: Start a New Project.....	3
Step 3: Enter Ship Parameters.....	4
Step 4: Select the Demo Ship Historical Database .....	5
Step 5: Activate the Demo Ships in Reference Project Window .....	6
Step 6: Select the Lightship Weight Group and Open the Estimation Window .....	7
Step 7: Estimate Lightship Weight.....	8
Step 8: Estimate Lightship VCG.....	9
Step 9: Estimate Lightship LCG .....	10
Step 10: Lock Lightship Estimate and Select Subgroup .....	11
Step 11: Estimate Weight of Equipment Group .....	12
Step 12: Estimate VCG of Equipment Group .....	13
Step 13: Estimate LCG of Equipment Group.....	14
Step 14: Move to Hull Group .....	14
Step 15: Change Weight Estimation Formula for Hull .....	15
Step 16: Estimate the Hull Weight.....	15
Step 16: Estimate the Hull VCG .....	16
Step 17: Estimate the Hull LCG .....	17
Step 18: Move to Machinery Group .....	17
Step 19: Set Power Range Limit to Filter Projects .....	18
Step 20: Estimate Machinery Weight .....	19
Step 21: Estimate Machinery VCG .....	20
Step 22: Estimate Machinery LCG .....	21
Step 23: Check Results from Subgroups .....	22
Step 24: Remove the Remainder Value.....	22
Step 25: Select Your Company Logo for Reports .....	23
Step 26: Print a Result Report .....	24
Step 27: Print a Detailed Report.....	25

## Step 1: Start ShipWeight and Log on



Start ShipWeight and log in to ShipWeight using the user name “Administrator” and password “admin”.

## Step 2: Start a New Project



When ShipWeight opens, click the “New” button on the toolbar and select “ProjectDB” as Database ID, set “Tutorial” as Project ID, and select Main Type “Offshore Vessel” and sub type “Anchor Handling Tug”. You may also give in a vessel name if you’d like, but this is not necessary. Hit the “OK” button.

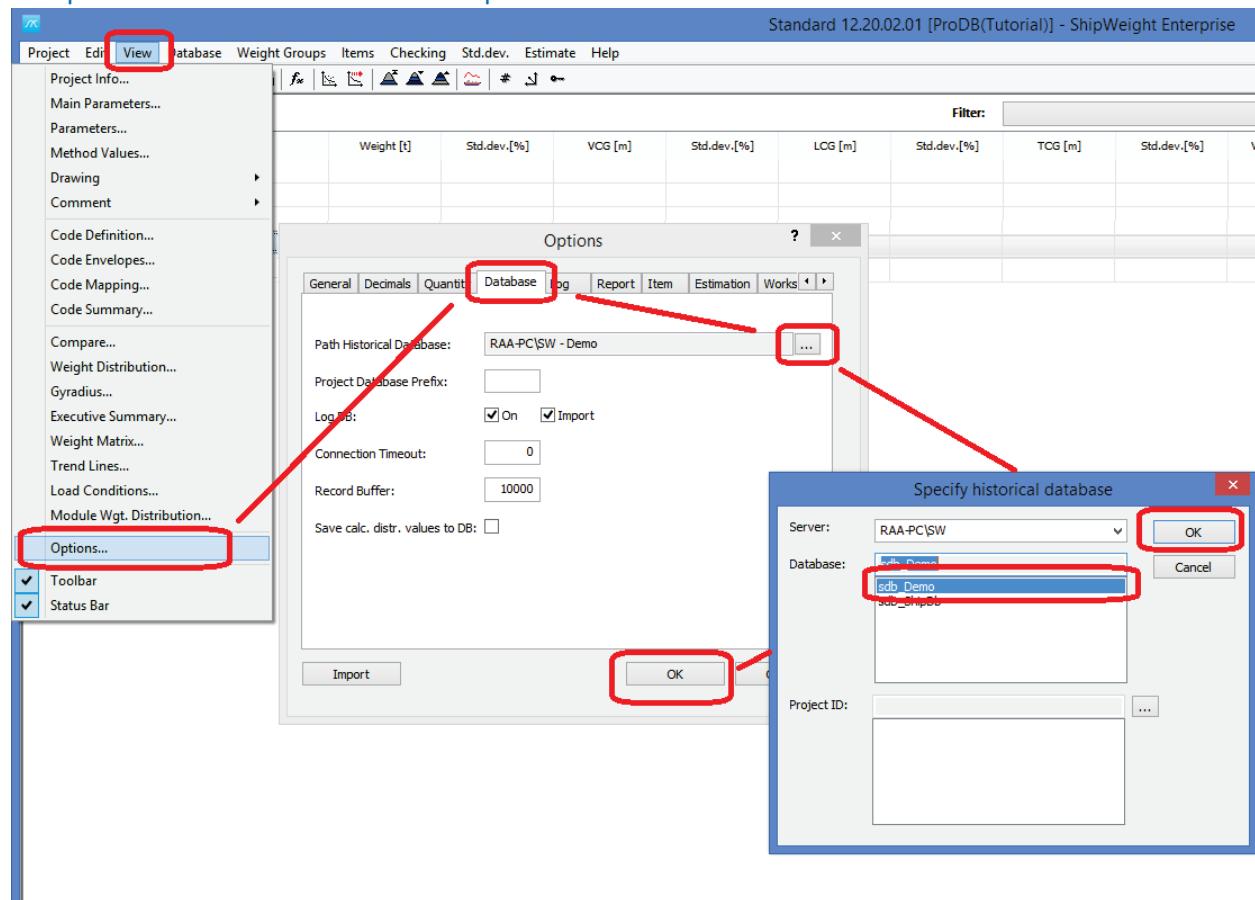
## Step 3: Enter Ship Parameters

Parameters    Main Parameters    Viktige par RRM

Parameter	Value	Std.dev. [%]
<b>MAIN DIMENSIONS</b>		
— Ship length over all [m]	74	
— Length betw. perp. [m]	69	
— Ship beam [m]	21	
— Depth upperm. cont. deck [m]	7.5	
— Depth to maindeck [m]	7.5	
— Draught, CWL [m]		
— Scantling draught [m]		
— Displacement [t]	<input style="width: 20px; height: 20px;" type="button" value="..."/>	
<b>CAPACITIES</b>		
— Numb. passengers [-]	<input style="width: 50px; height: 20px; border: 1px solid #ccc;" type="text"/>	
— Numb. crew [-]		
— Numb. cars [-]		
— Numb. containers [-]		
<b>TONNAGE</b>		
— Gross tonnage [GT]	<input style="width: 20px; height: 20px;" type="button" value="..."/>	
— Net tonnage [NT]		
— Deadweight [t]		
<b>MACHINERY</b>		
— Main engine power [kW]	11000	
— Numb. main engines [-]		
— Rot.speed main engine [rpm]		
— Maximum speed [knot]		
— Propeller diameter [mm]		
<b>HULL</b>		
— Main hull material		
— Ice class		
— Block coefficient [-]	0.71	<input style="width: 20px; height: 20px;" type="button" value="..."/>
<input type="checkbox"/> Defined Only		
<input type="button" value="Print"/>	<input type="button" value="OK"/>	<input type="button" value="Cancel"/>

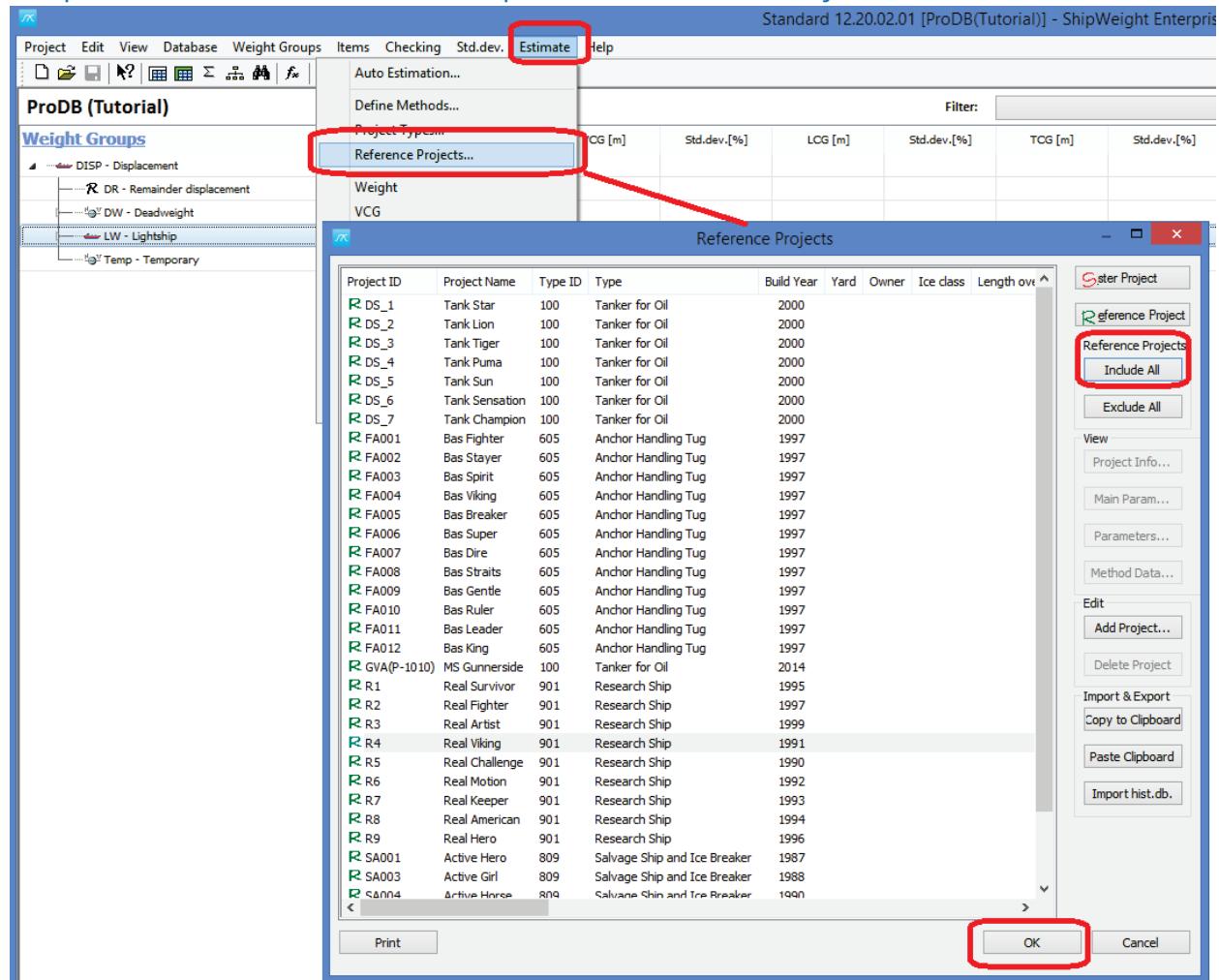
In the “Main Parameter” window that shows up, give in at least the parameters as shown above. You may give in other parameters as well if you like.

## Step 4: Select the Demo Ship Historical Database



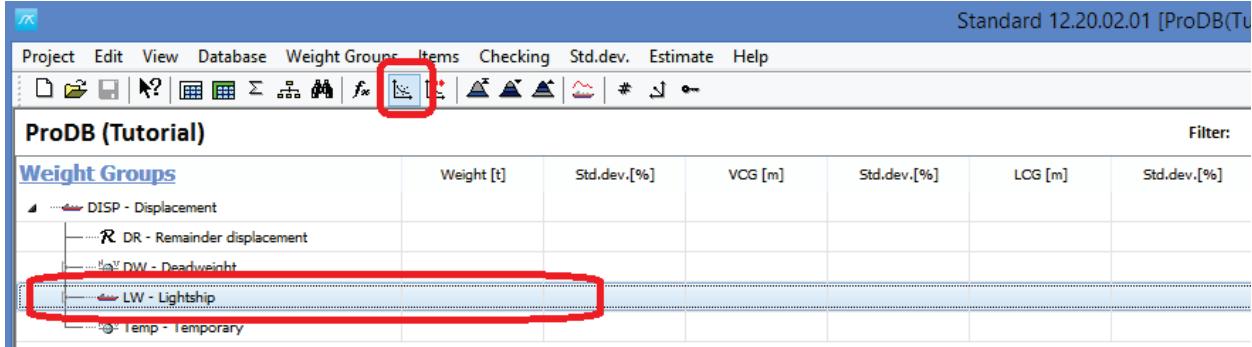
Next, go to the View menu and select the “Options...” window. Click the “Database” tabsheet in the Options window, and select the “Browse” [...] button next to the “Path Historical Database”. In the pop-up dialog from the browse, select the “sdb\_Demo” database in the list and hit the “OK” button. Next, hit the “OK” button on the Options dialog.

## Step 5: Activate the Demo Ships in Reference Project Window



Next, head to the “Estimate” menu and select “Reference Projects...” window. In this window, select the “Include all” button and hit “OK” button. This activates all the reference projects that in the demo database that was selected in previous step. We now have a basis ready for the parametric estimation.

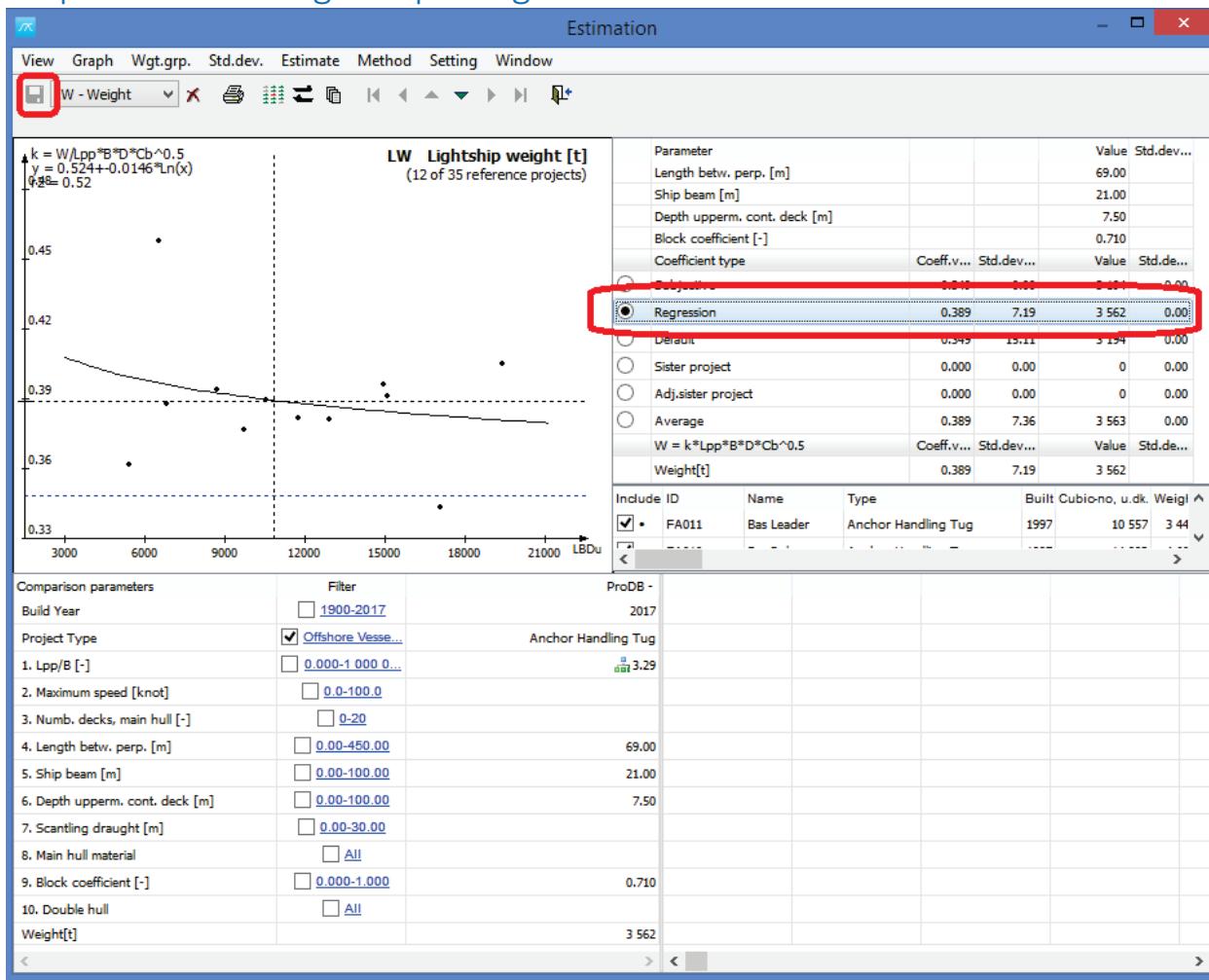
## Step 6: Select the Lightship Weight Group and Open the Estimation Window



The screenshot shows the ShipWeight software interface. The main window title is "Standard 12.20.02.01 [ProDB(Tu)]". The menu bar includes Project, Edit, View, Database, Weight Groups, Items, Checking, Std.dev., Estimate, and Help. The toolbar contains various icons, with the last one (a graph) highlighted with a red box. The main area is titled "ProDB (Tutorial)" and displays a table of "Weight Groups". The columns are: Weight [t], Std.dev. [%], VCG [m], Std.dev. [%], LCG [m], and Std.dev. [%]. The data rows include: DISP - Displacement, DR - Remainder displacement, DW - Deadweight, LW - Lightship (which is selected and highlighted with a red box), and Temp - Temporary.

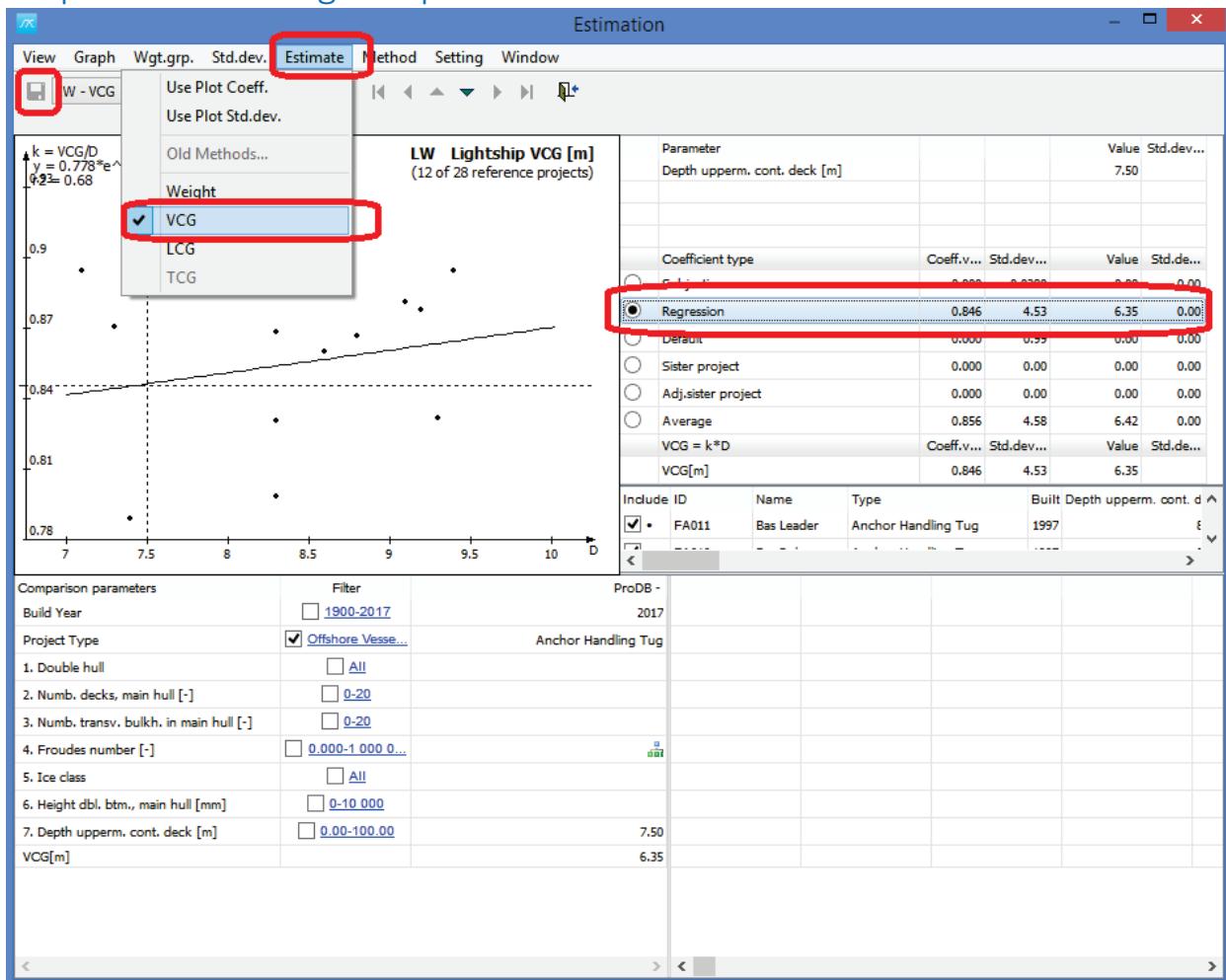
Select the “LW – Ligthship” group in the main window WBS and clikc the estimation graph button in the toolbar to open the estimation dialog. We are now ready to estimate the Ligthship.

## Step 7: Estimate Lightship Weight



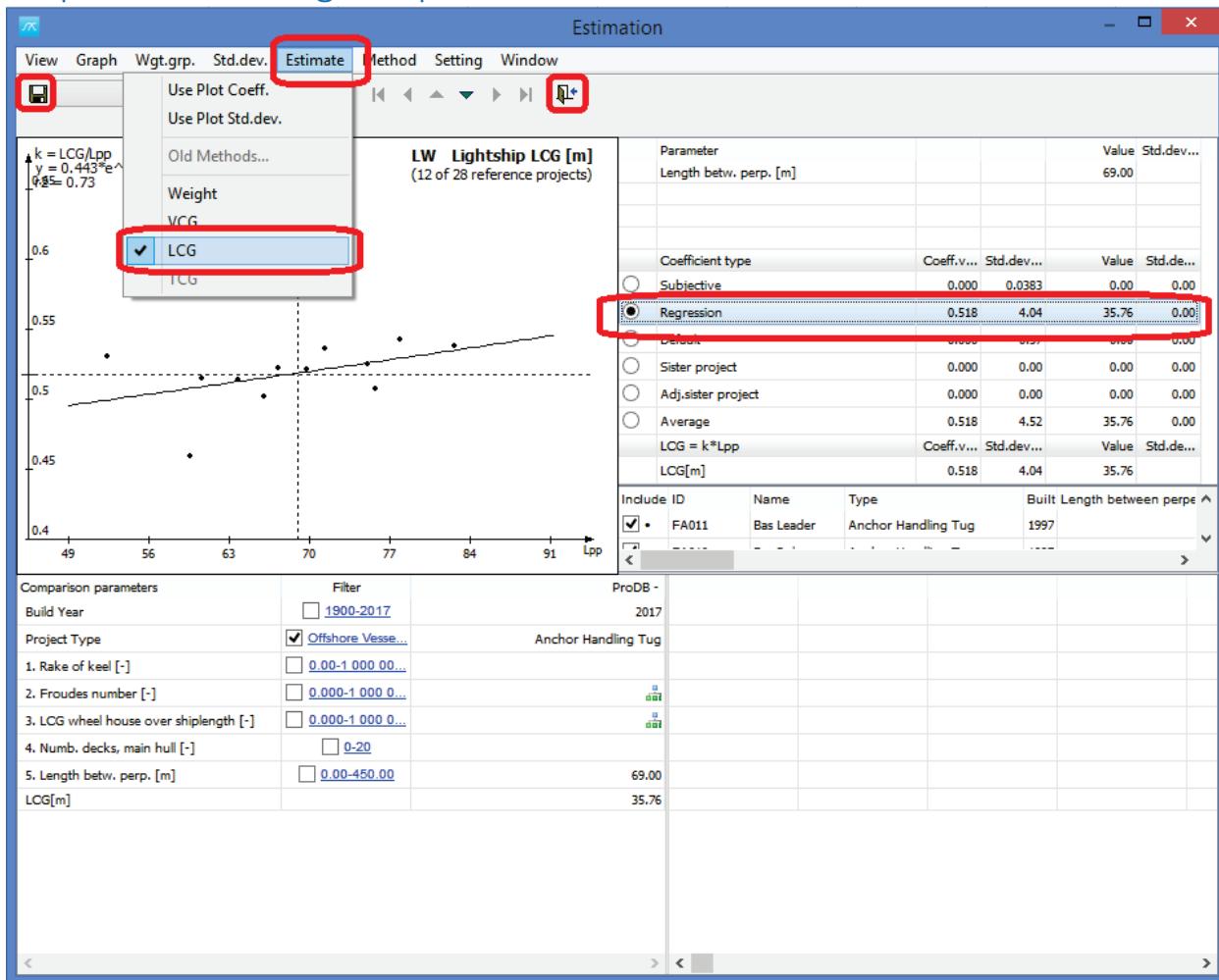
In the graph window, select the “Regression” radiobutton to execute an estimation based upon selecting a coefficient for the method from the regression line. Next, click the “Save” button to save your initial Lightship estimate.

## Step 8: Estimate Lightship VCG



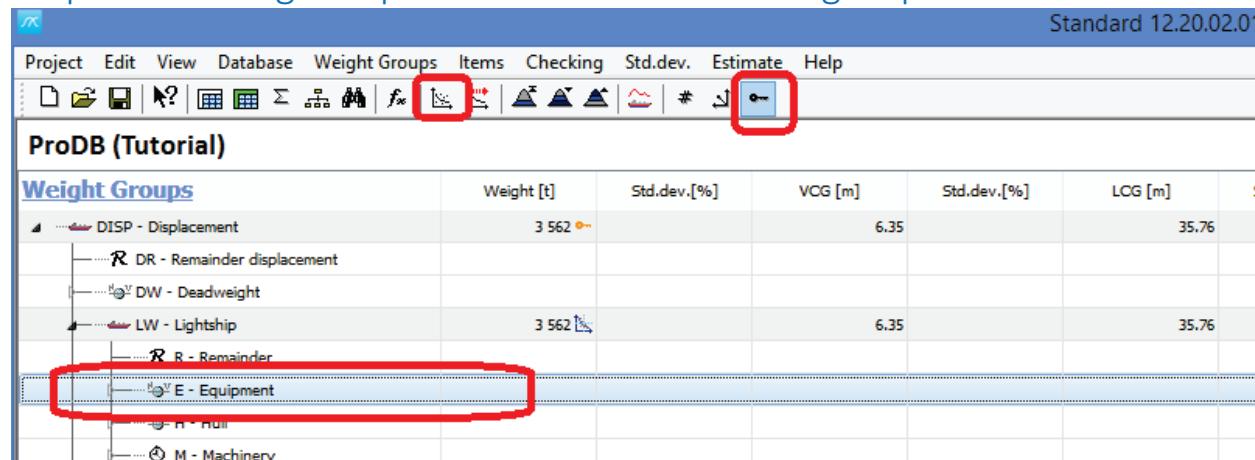
Go to the “Estimate” menu in the Estimation window and select “VCG” to start estimating the initial LightShip VCG value. Select the “Regression” radiobutton to estimate the VCG value for the lightship and hit the “Save” button on the toolbar to save.

## Step 9: Estimate Lightship LCG



Repeat the same steps as above, but now for selecting the LCG instead of VCG, and after this, close the window by clicking the Close (Door) button on the toolbar.

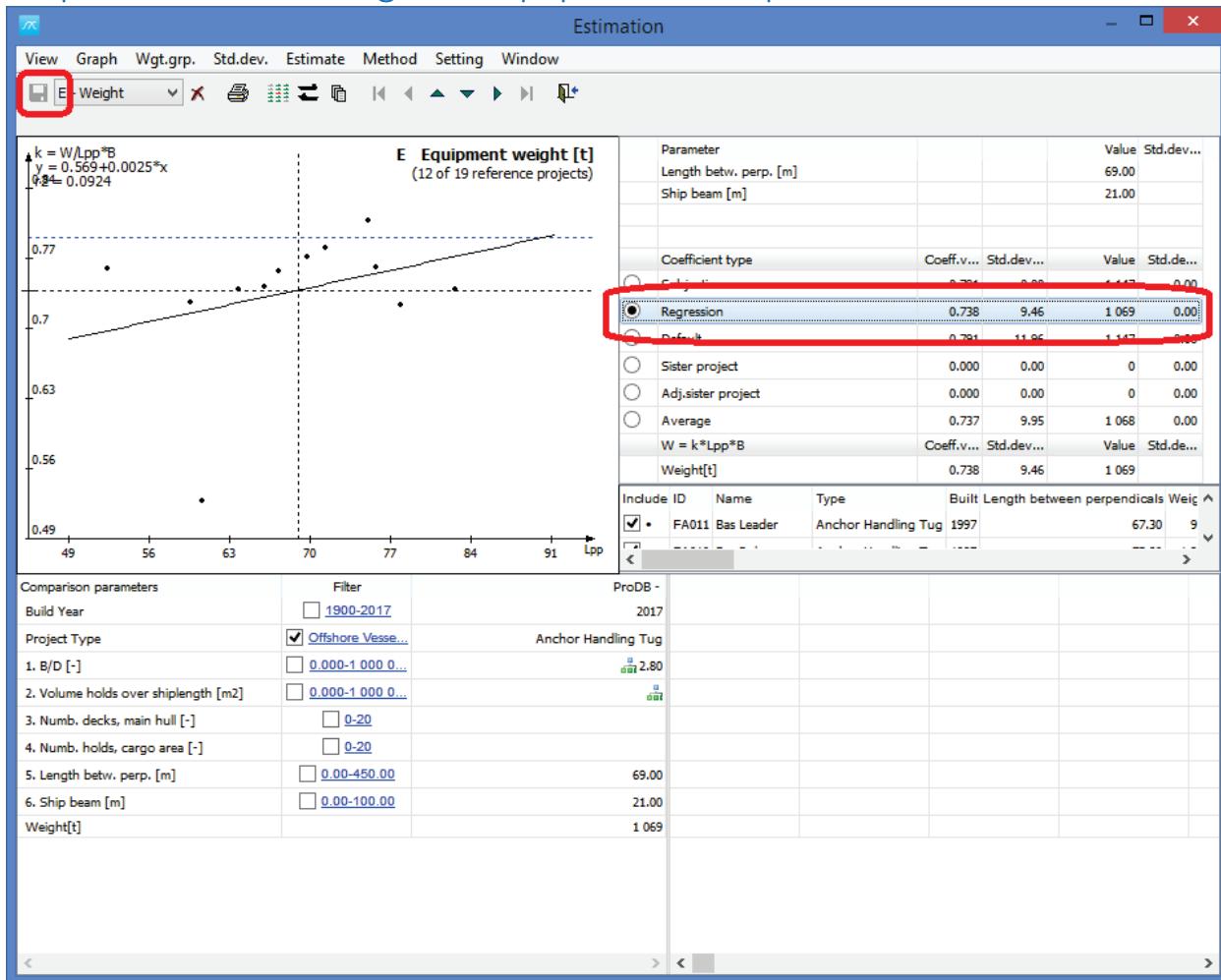
## Step 10: Lock Lightship Estimate and Select Subgroup



Weight Groups	Weight [t]	Std.dev. [%]	VCG [m]	Std.dev. [%]	LCG [m]
DISP - Displacement	3 562		6.35		35.76
DR - Remainder displacement					
DW - Deadweight					
LW - Lightship	3 562		6.35		35.76
R - Remainder					
E - Equipment					
n - null					
M - Machinery					

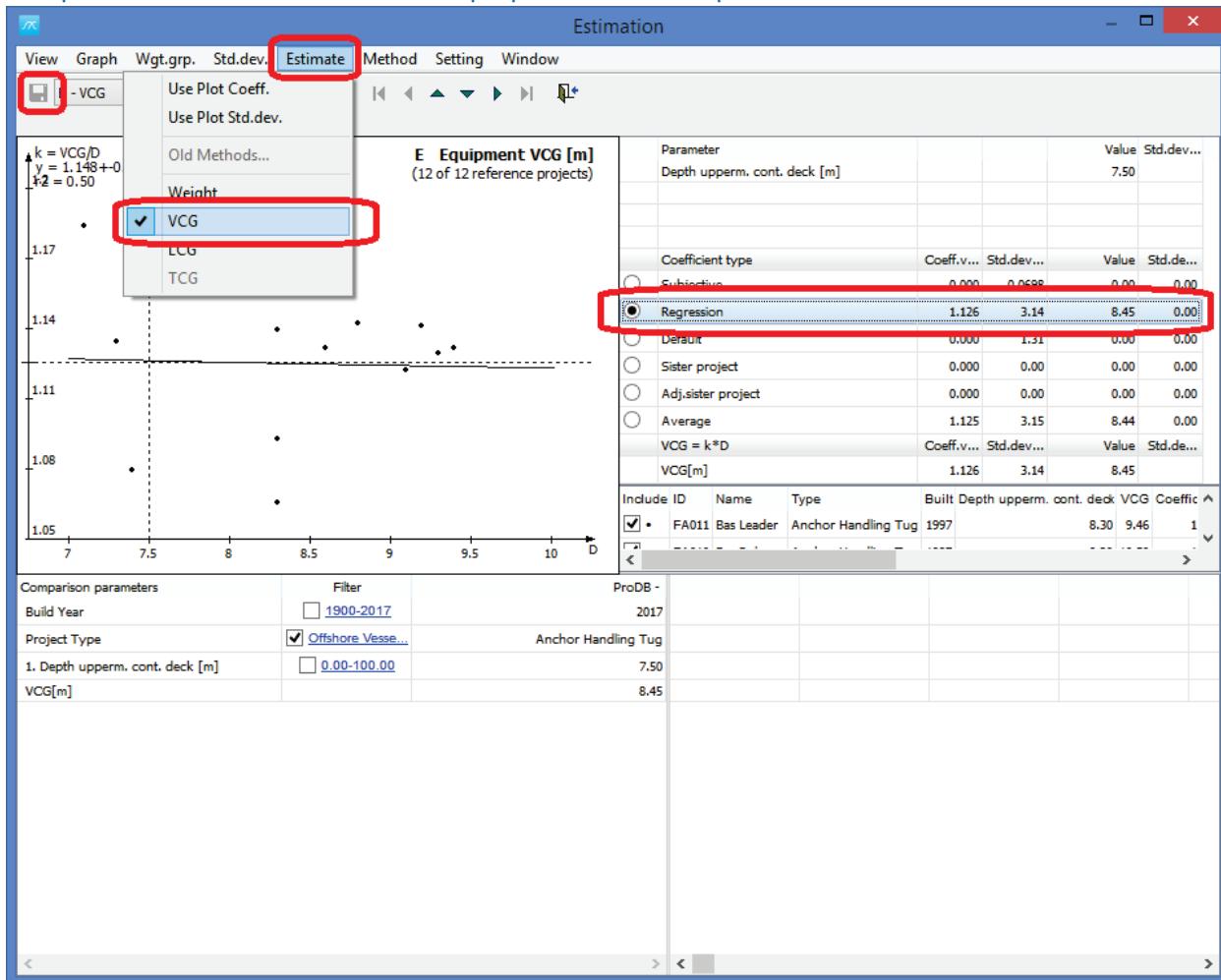
You should now see the results of the Lightship estimation in the main window. Click the Lock (key) button on the right end of the toolbar to lock the estimated numbers before we go refine the estimate. Next, select the "Equipment" weight groups in the main window and once again click the graph icon on the toolbar to open the Estimation window.

## Step 11: Estimate Weight of Equipment Group



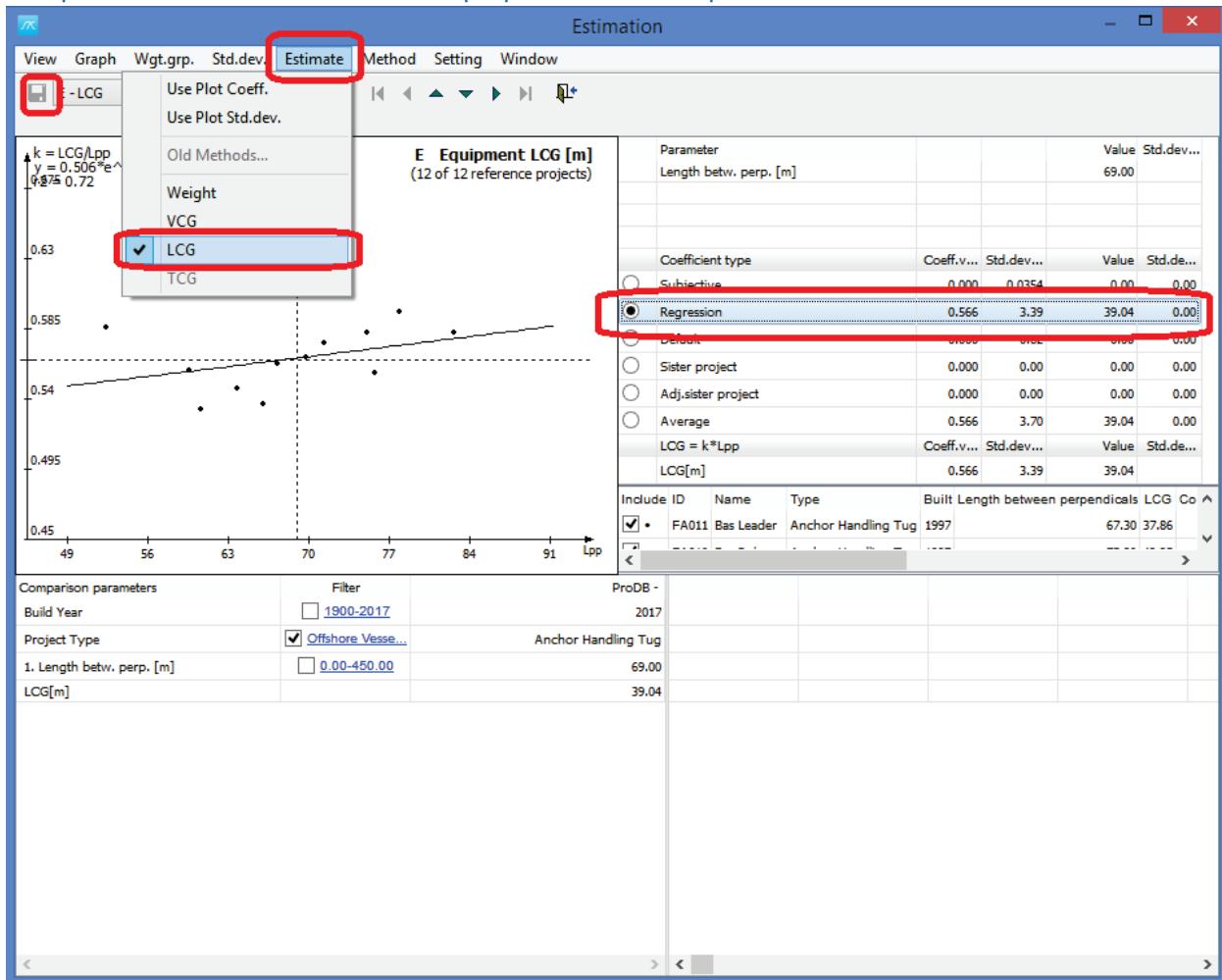
Repeat the steps from the Lightship estimation: Select the “Regression” radiobutton to execute an estimation based upon selecting a coefficient for the method from the regression line. Next, click the “Save” button.

## Step 12: Estimate VCG of Equipment Group



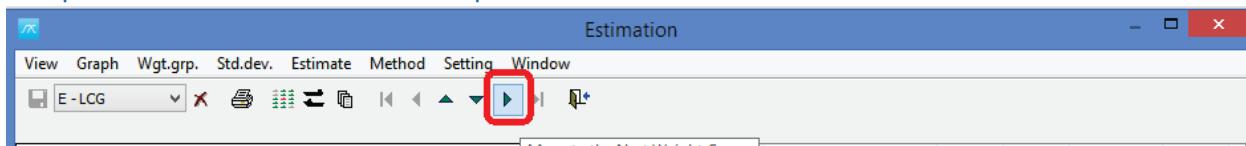
Repeat the steps from the Lighship VCG estimation: Go to the “Estimate” menu in the Estimation window and select “VCG” to start estimating the initial Equipment VCG value. Select the “Regression” radiobutton to estimate the VCG value for the equipment and hit the “Save” button on the toolbar to save.

## Step 13: Estimate LCG of Equipment Group



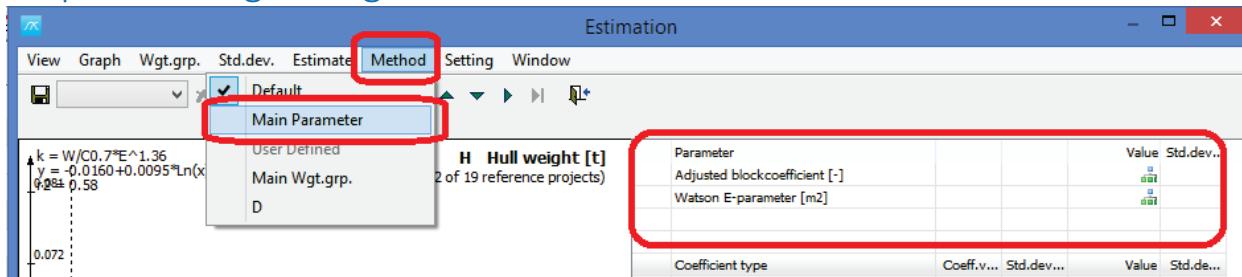
Repeat the steps from the Lighship LCG estimation: Go to the “Estimate” menu in the Estimation window and select “LCG” to start estimating the initial Equipment LCG value. Select the “Regression” radiobutton to estimate the LCG value for the equipment and hit the “Save” button on the toolbar to save.

## Step 14: Move to Hull Group



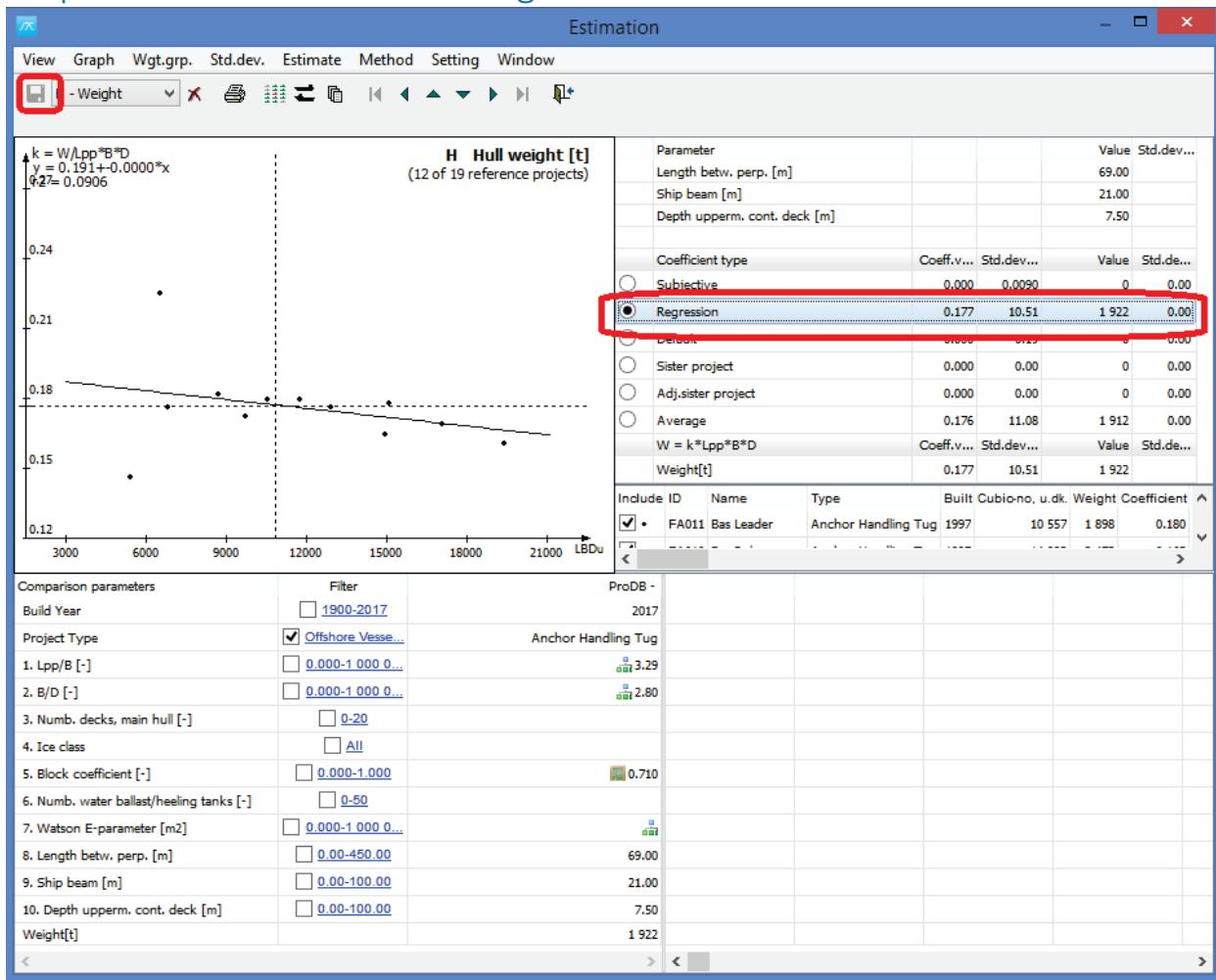
Click the toolbar button with the right arrow as marked above to move to the next weight group on the same level (Hull) without closing the estimation Window.

## Step 15: Change Weight Estimation Formula for Hull



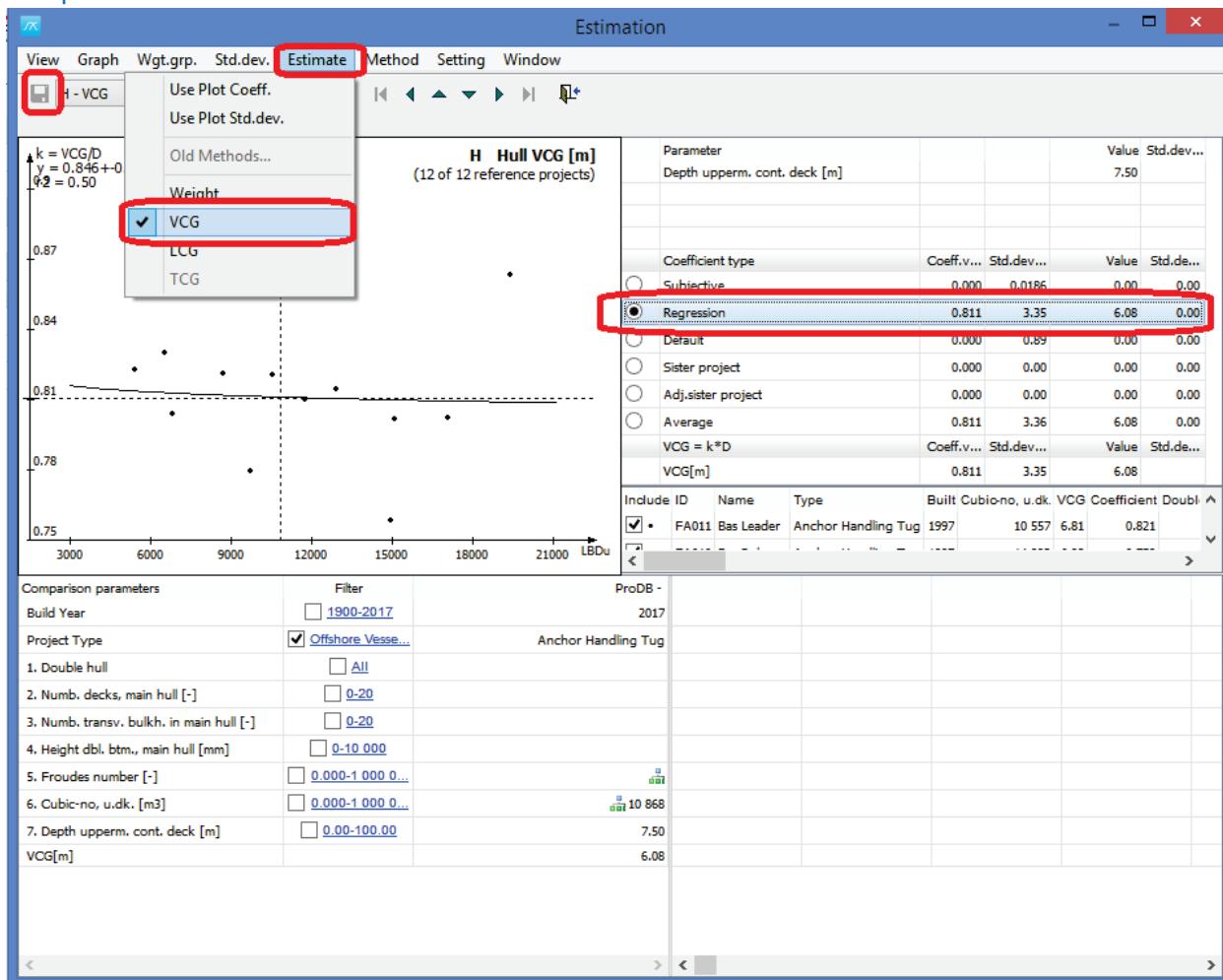
In the Hull weight group the standard formula is using the Watson E-parameter. We do not have the details at hand to fill this in, so instead we will change formula. Go to the “Method” menu and select Main Parameter as the method to use instead of the Default method. The method will now change to a formula only containing the main parameters and we do not have to enter more information to carry out the estimation.

## Step 16: Estimate the Hull Weight



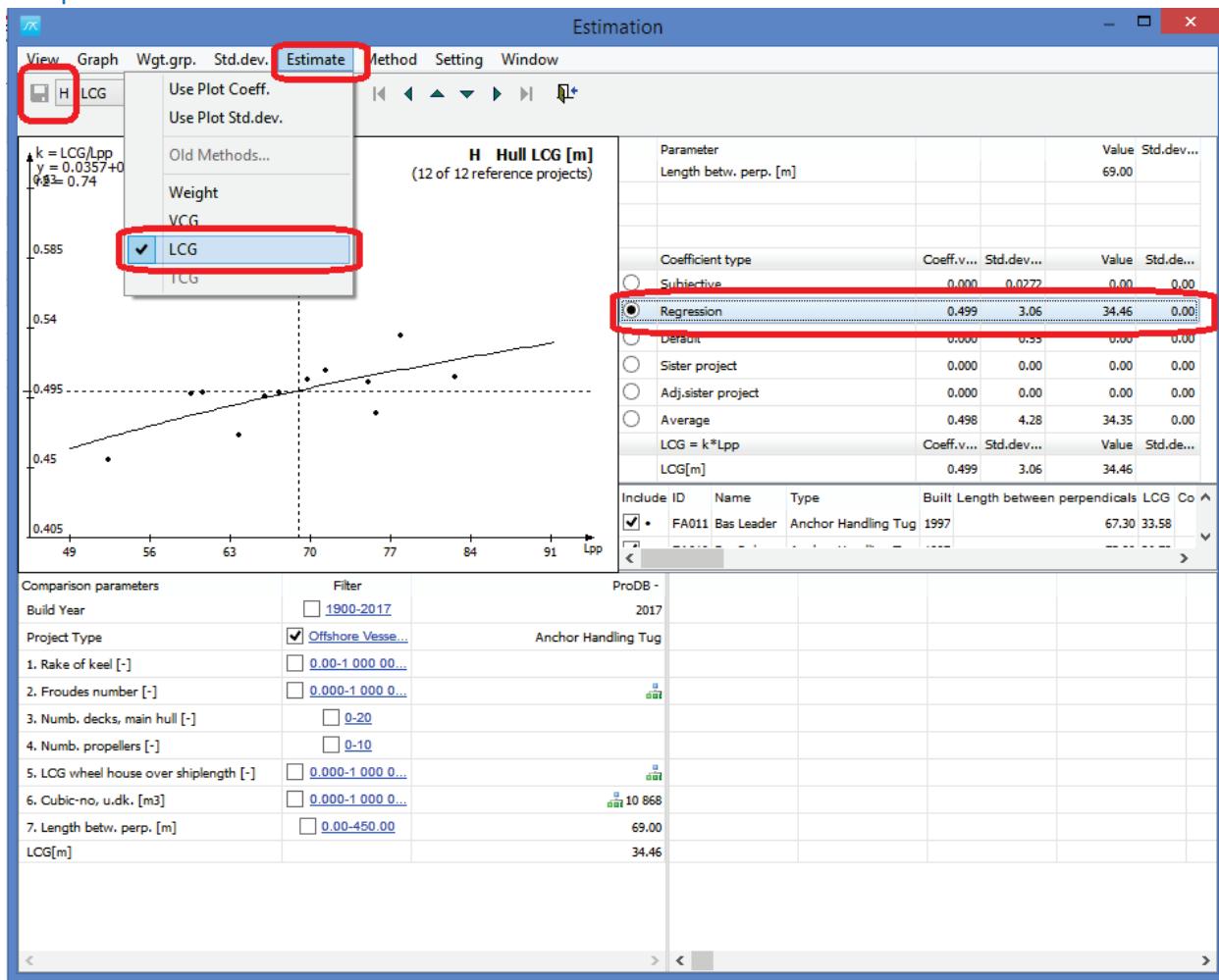
Now estimate the Hull weight by selecting the “Regression” radiobutton and save the result.

## Step 16: Estimate the Hull VCG



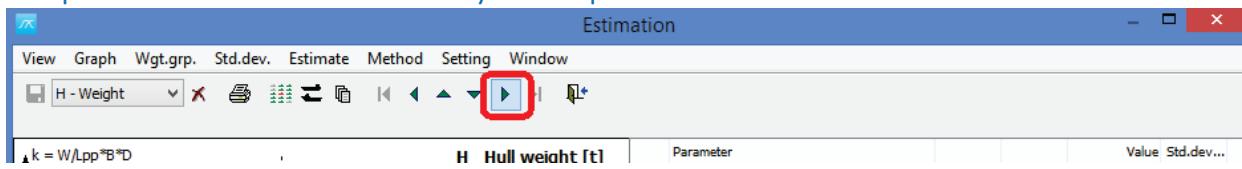
Next, switch to VCG estimation from the Estimate menu and carry out this estimation by again selecting the "Regression" coefficient and finally again save the result.

## Step 17: Estimate the Hull LCG



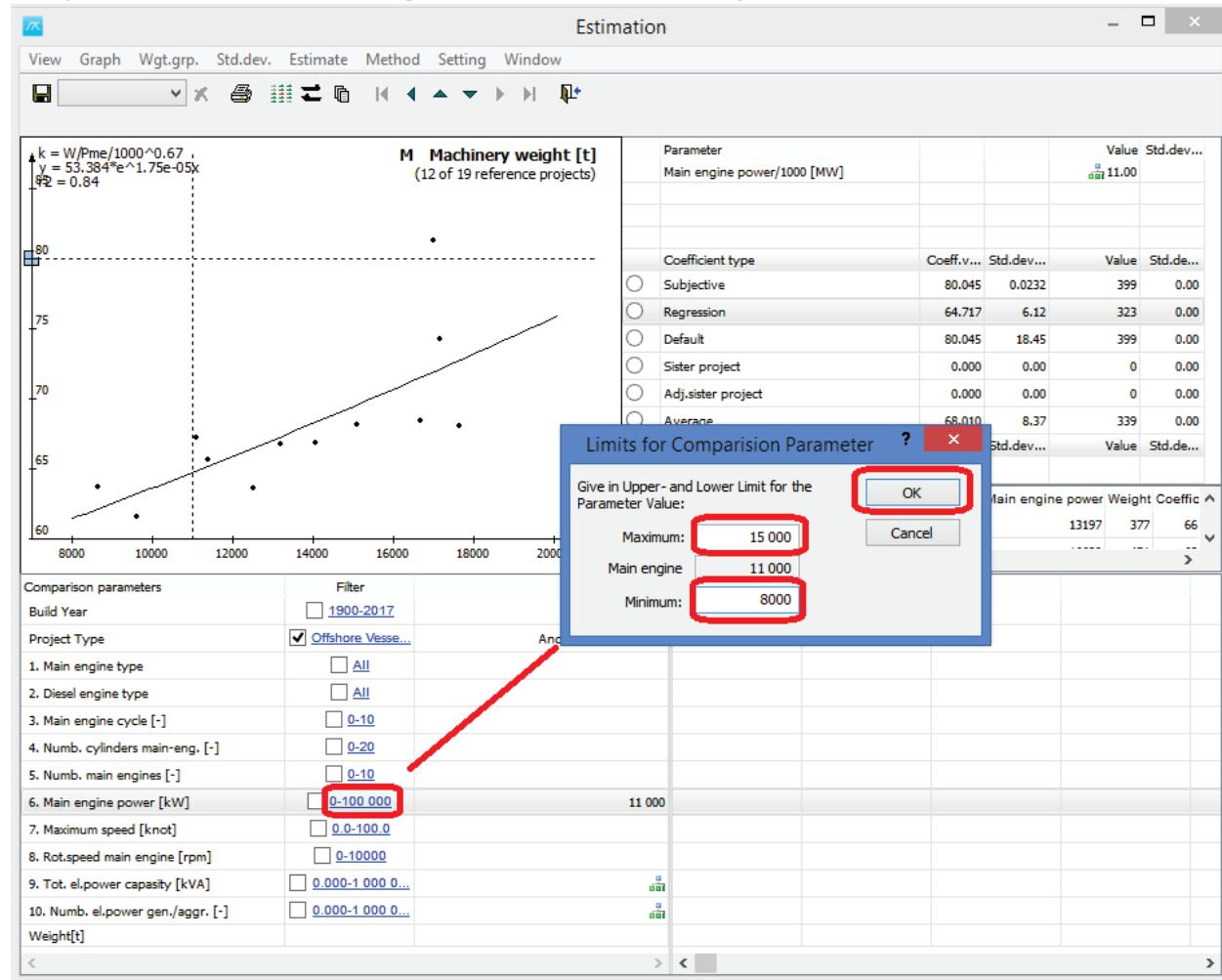
Repeat the steps you just did for the VCG estimation, only this time for the LCG.

## Step 18: Move to Machinery Group



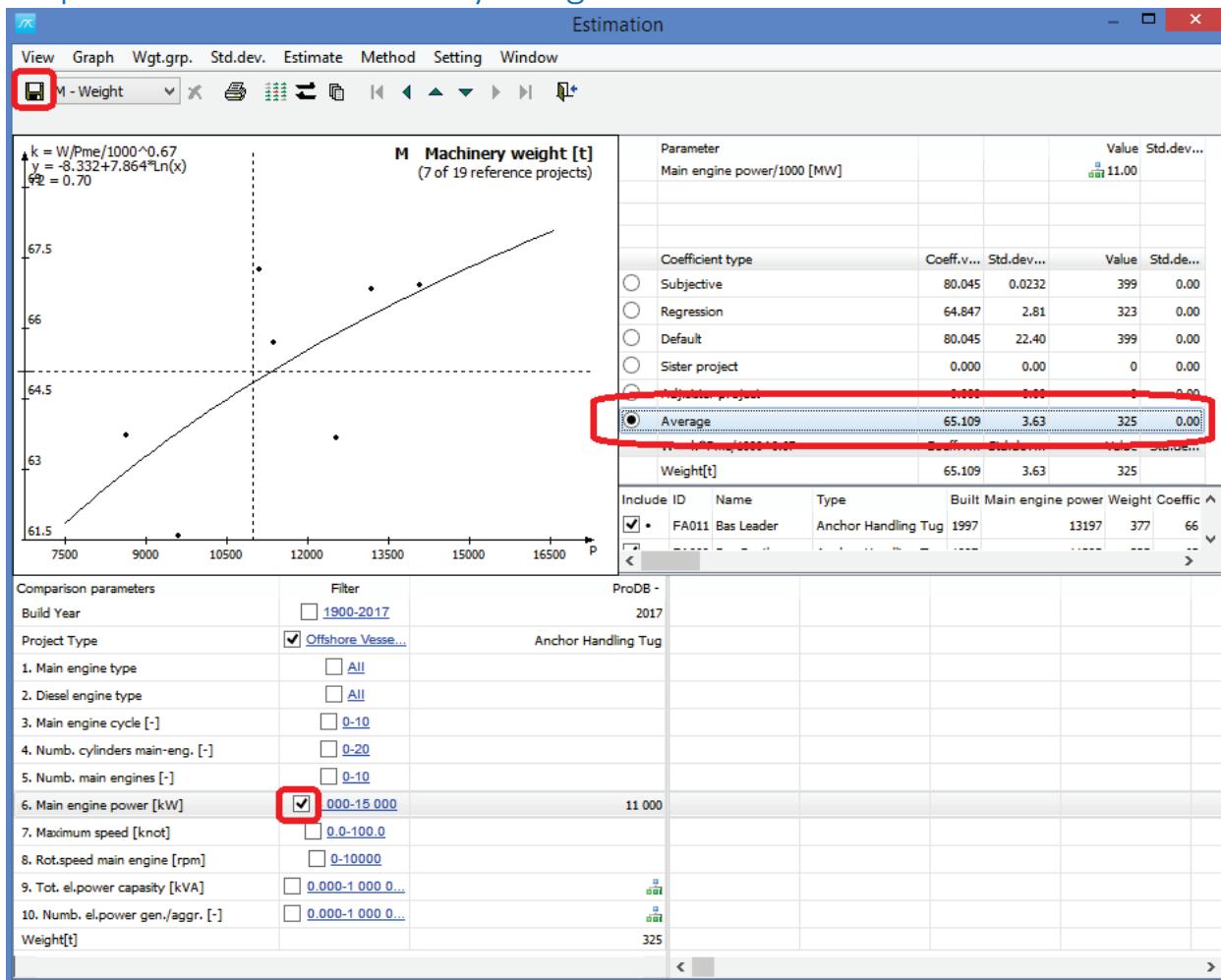
Click the toolbar button with the right arrow as marked above to move to the final weight group on the same level (Machinery) without closing the estimation Window.

## Step 19: Set Power Range Limit to Filter Projects



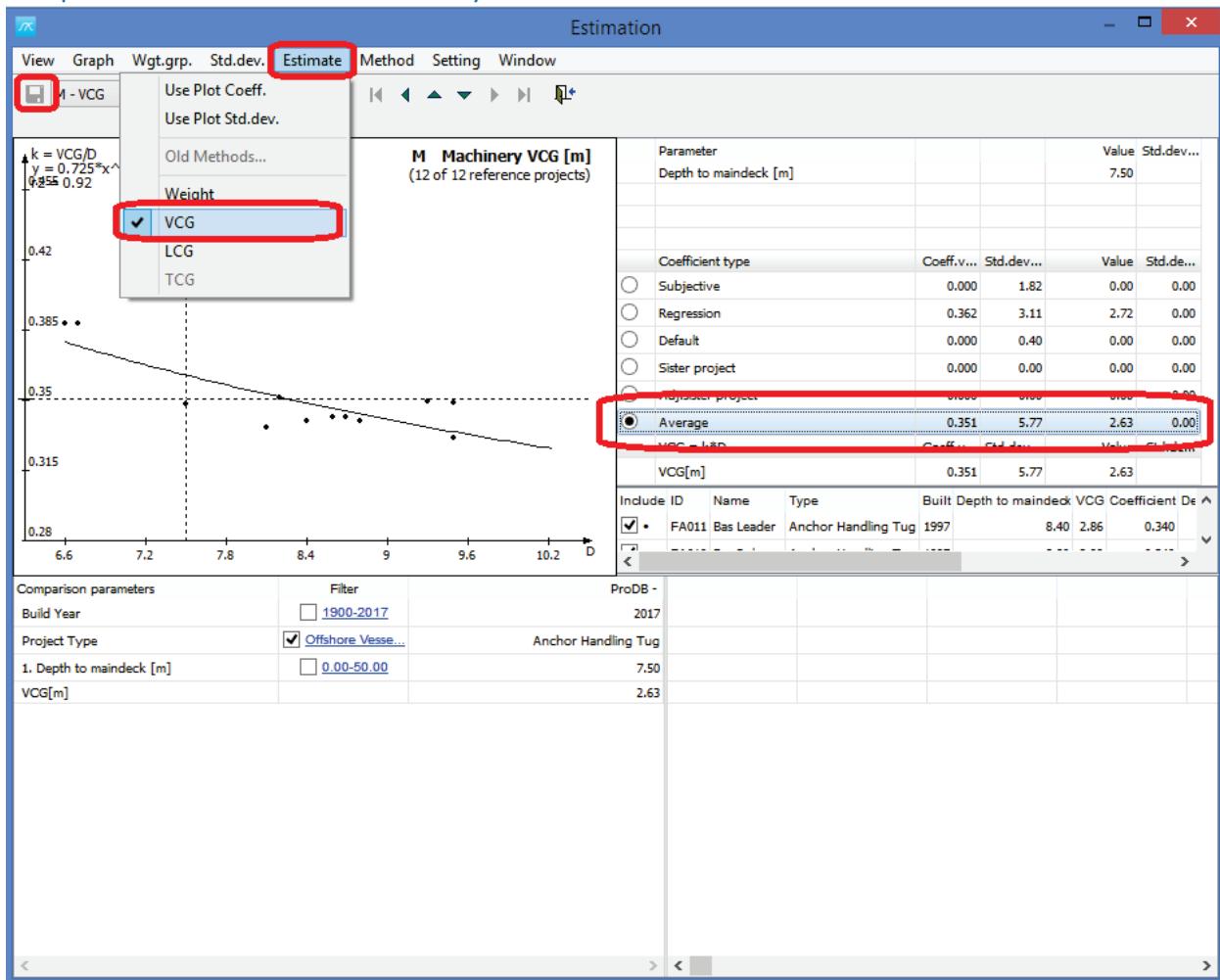
In the Machinery group, click the hyperlink next to the “Main engine power” parameter and in the pop-up dialog, set 15000 as maximum power and 8000 as minimum power as range for the propulsion data to be plotted in the graph. Hit OK button to close dialog.

## Step 20: Estimate Machinery Weight



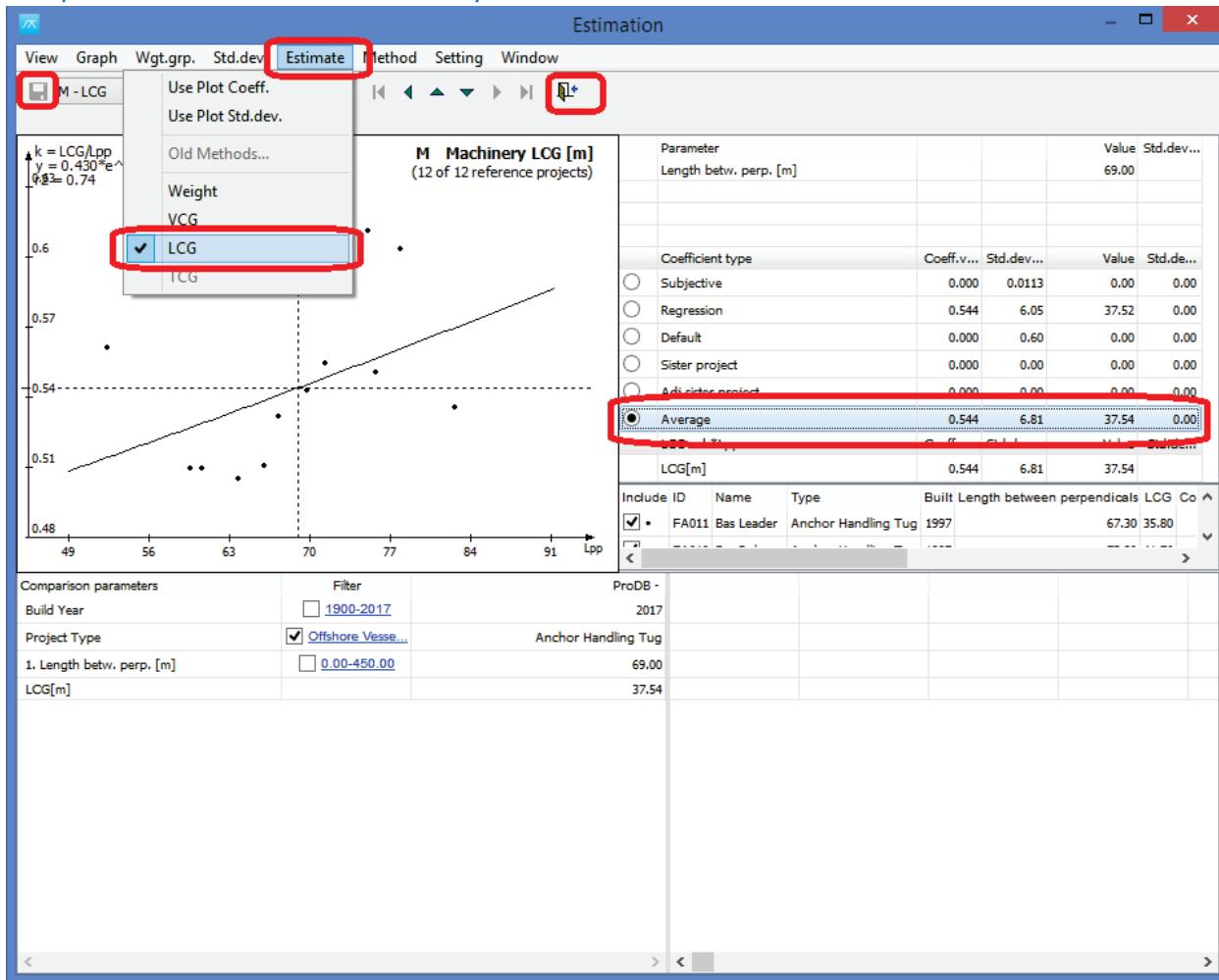
Check the checkbox to the left of the hyperlink where you just set the range for Main engine power to activate this as a filter for the projects plotted in the graph. Click the “Average” radiobutton to select the coefficient to be used in the estimation and to calculate the Machinery weight. Save the result.

## Step 21: Estimate Machinery VCG



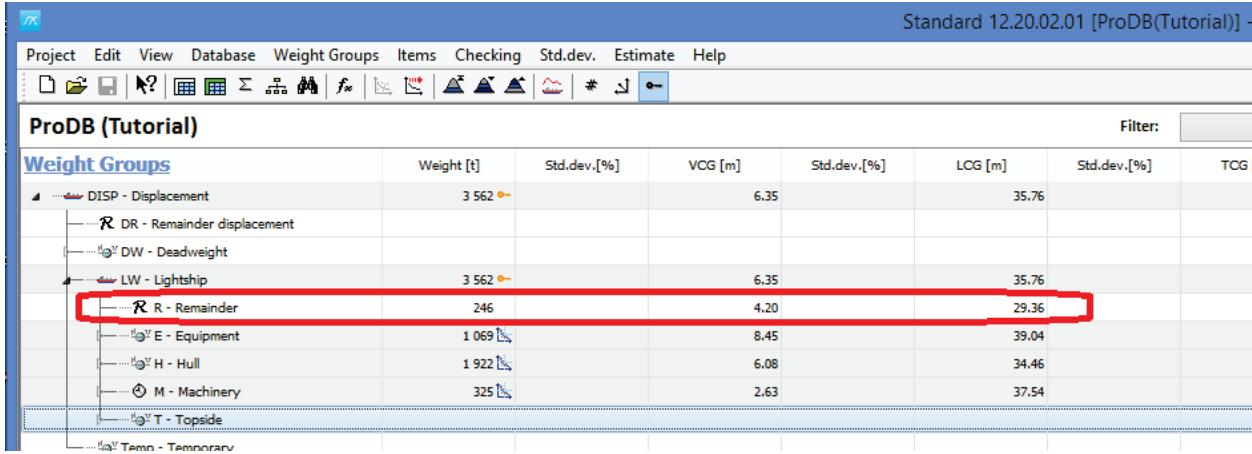
Go to the “Estimate” menu and carry out the estimation for the VCG by selecting again the “Average” coefficient. Save the result.

## Step 22: Estimate Machinery LCG



Carry out LCG estimation in similar fashion as for VCG, but in addition, after saving, close the Estimation window by clicking the Close button (door) in the toolbar.

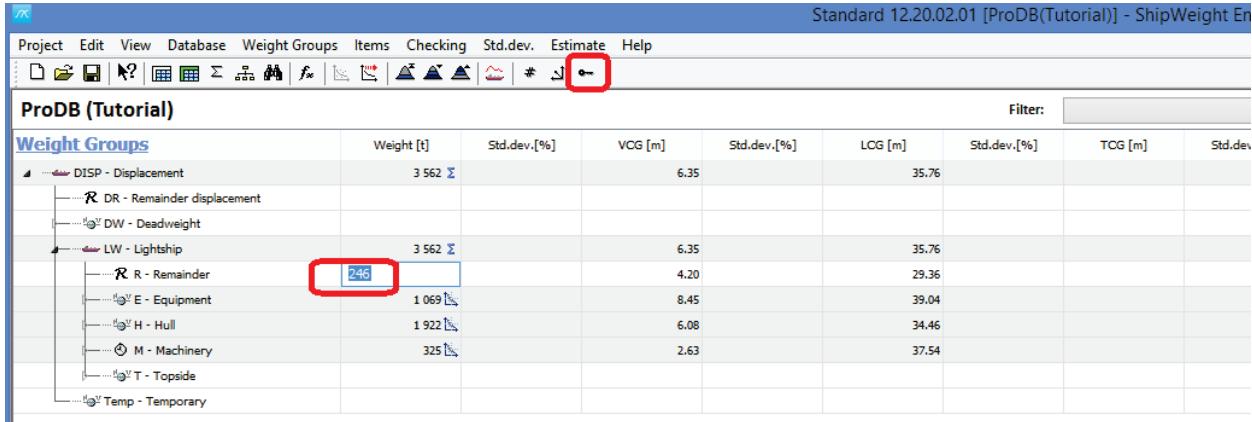
## Step 23: Check Results from Subgroups



The screenshot shows the ShipWeight software interface with the title bar "Standard 12.20.02.01 [ProDB(Tutorial)]". The menu bar includes Project, Edit, View, Database, Weight Groups, Items, Checking, Std.dev., Estimate, and Help. Below the menu is a toolbar with various icons. The main window displays a table titled "ProDB (Tutorial)" under "Weight Groups". The table has columns for Weight [t], Std.dev.[%], VCG [m], Std.dev.[%], LCG [m], Std.dev.[%], TCG [m], and Std.dev.[%]. The data rows are grouped by category: DISP - Displacement, DR - Remainder displacement, DW - Deadweight, LW - Lightship, E - Equipment, H - Hull, M - Machinery, and T - Topsides. A temporary group Temp - Temporary is also listed. The "R - Remainder" row under "LW - Lightship" is highlighted with a red box. The "Weight [t]" column for "R - Remainder" is 246.

You should now see the results of your estimation of the sublevels. However, not the value in the “Remainder” group as this automatically gets the deviation between your initial estimation and the sum of the sublevel group estimations. This is because you locked the results after the Lightship estimate.

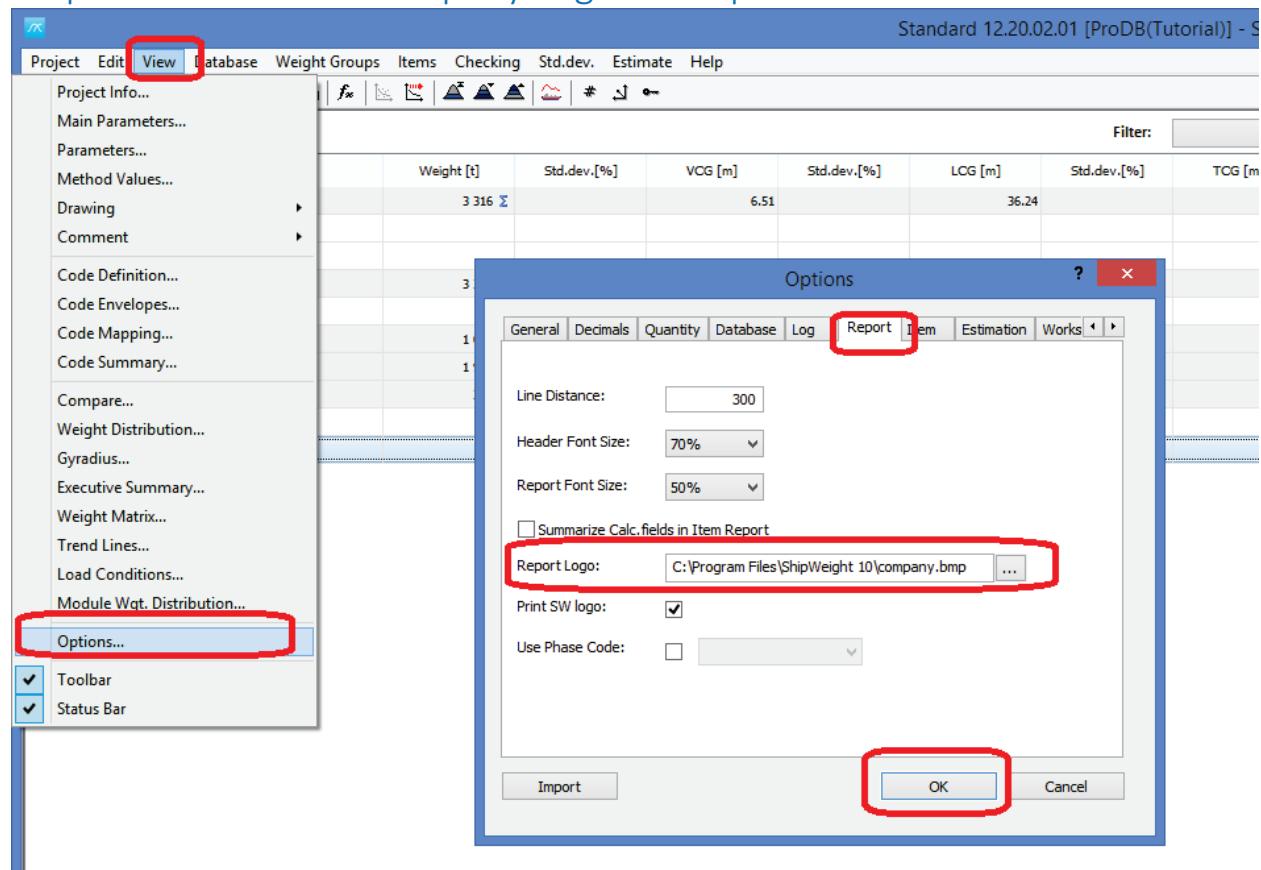
## Step 24: Remove the Remainder Value



This screenshot shows the same ShipWeight software interface as the previous one, but the "R - Remainder" row under "LW - Lightship" is selected for deletion. A red box highlights the delete icon in the toolbar and the value "246" in the "Weight [t]" cell of the selected row. The rest of the table structure remains the same as in the previous screenshot.

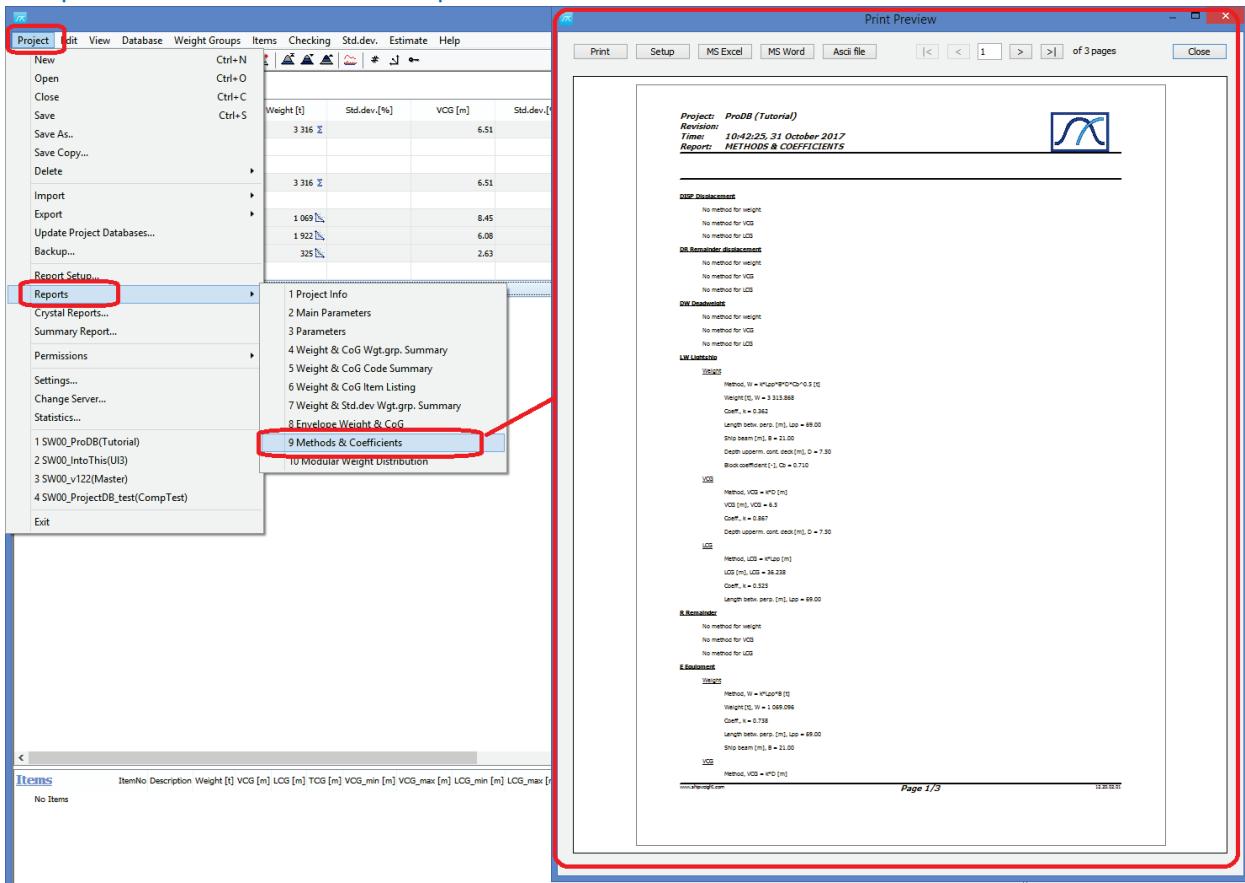
Unlock the results and delete the Remainder value by clicking on the Remainder weight grid to get it to edit modulus and delete the weight value. The results of the Lightship will after this become the sum of the subgroups.

## Step 25: Select Your Company Logo for Reports



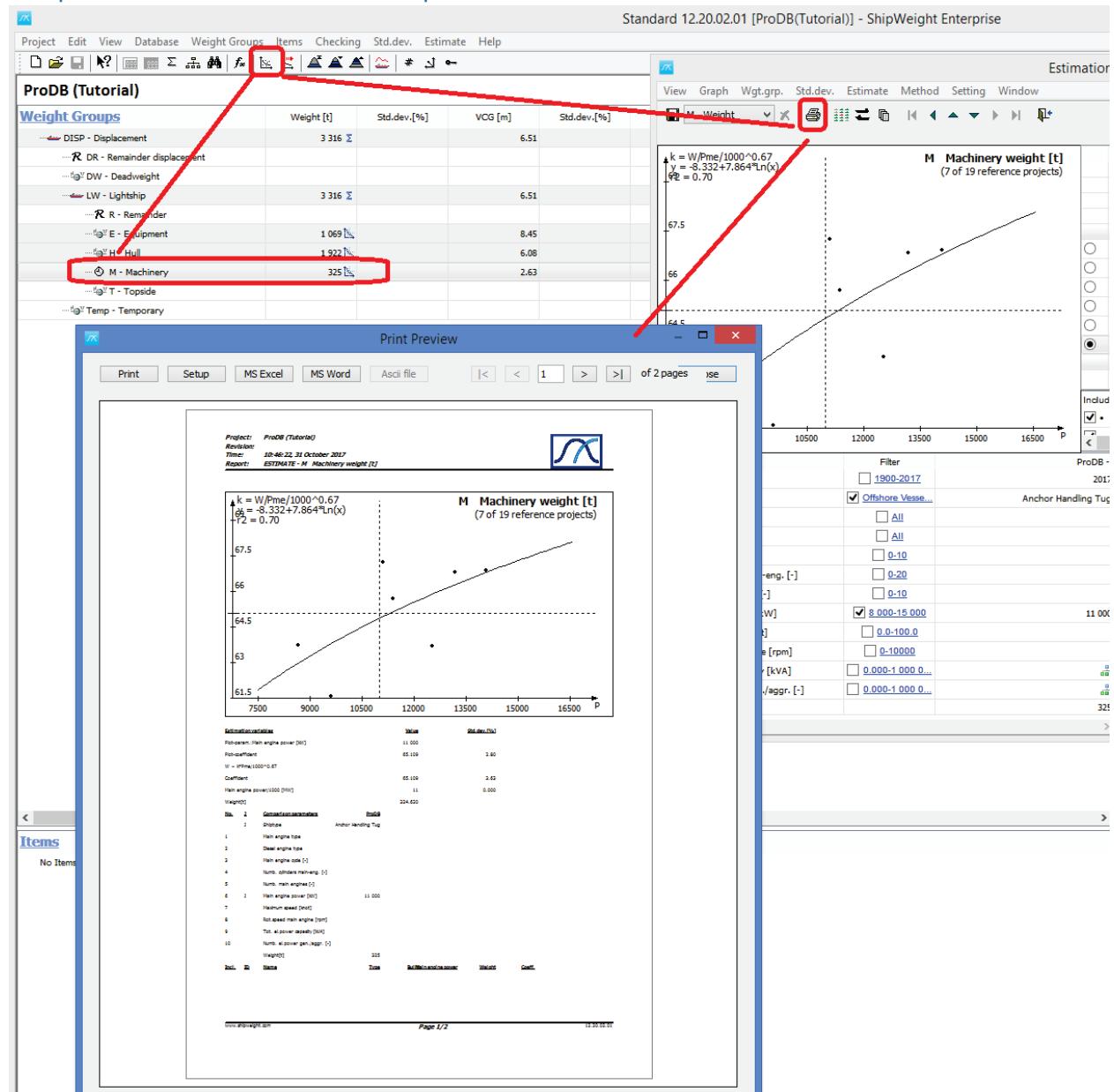
Go to the View menu and open the Options window. Select the “Report” tabsheet and click the browse button [...] to select a company logo file. Hit the OK button.

## Step 26: Print a Result Report



Go to the Project menu, select submenu Reports and select submenu item for report number 9 – “Methods and Coefficients” to produce a report of the estimation you have just finished.

## Step 27: Print a Detailed Report



To produce more background information about a specific estimation, select the weight group in the main window, open the estimation window from the toolbar and click the "Print" button. This will produce a more detailed report for the estimation of a particular weight group.