# Power Curve Working Group Open Source Tool Overview

## 

## Contents

1. License
2. Installation
3. Getting Started
4. Benchmark versus Excel Consensus Analysis

## 1 Licence

## The PCWG tool is released under the MIT Software License.

The MIT License (MIT)

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## 2 Installation

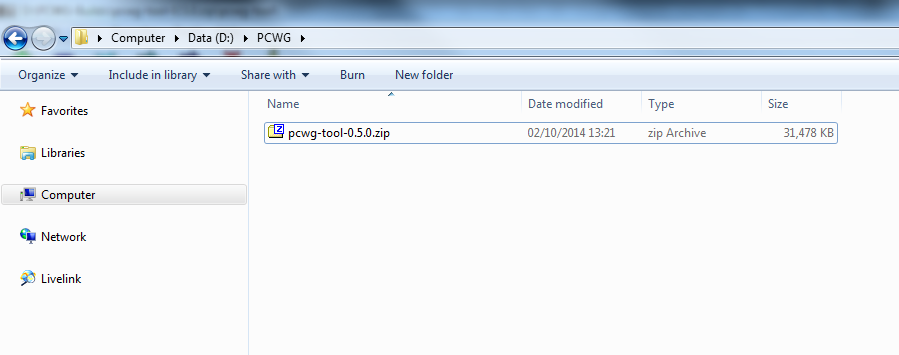
There are two ways to run the PCWG code:

1. Running the standalone .exe
2. Running from the source code

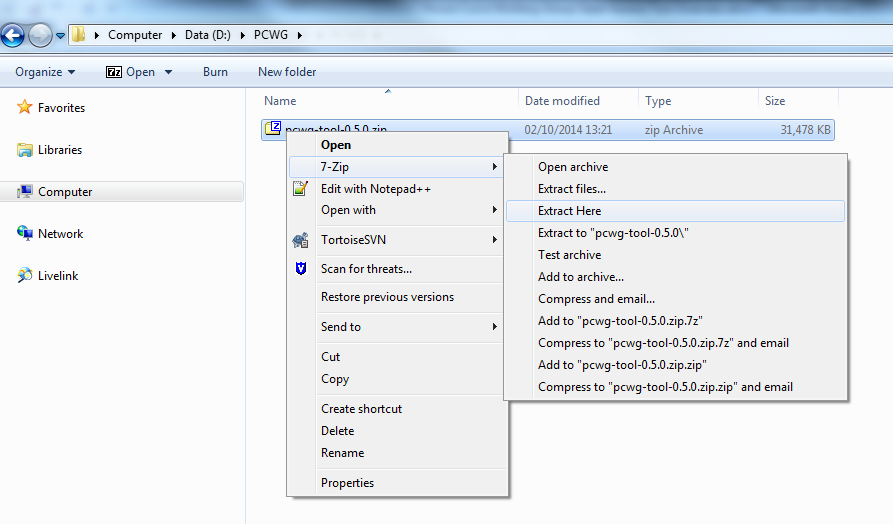
### 2.1 Installing PCWG Executable

To run the PCWG .exe the following steps should be completed:

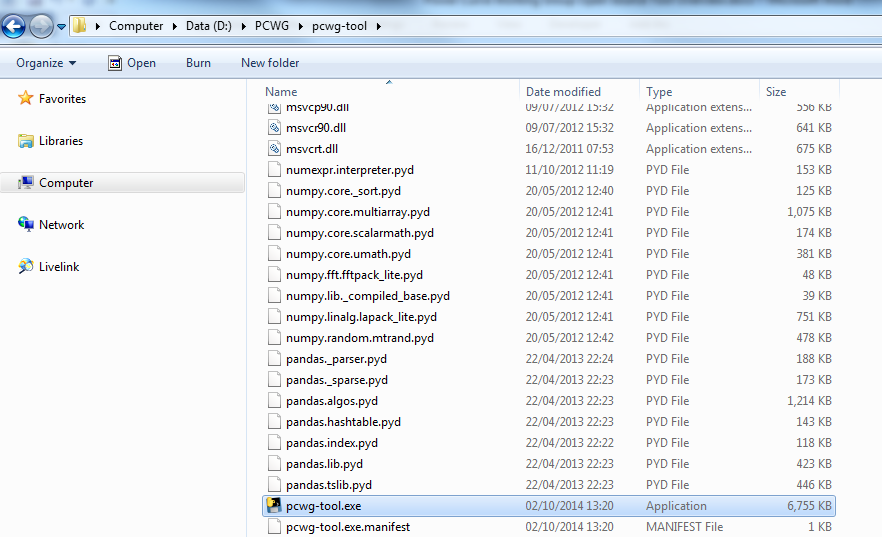
* Download the latest release from: <https://sourceforge.net/projects/pcwg/files>
* Save the zip file to a local folder



* Extract the contents of the archive pcwg-tool.zip to a local folder e.g. D:\PCWG\PCWG-Tool. Note: you may wish to download 7zip from <http://www.7-zip.org/download.html>



* Double-click on the local executable D:\PCWG\PCWG-Tool \pcwg-tool.exe



### 2.2 Installing PCWG Source Code

To run the PCWG source code the follow steps should be completed:

* **Install python**:
  + There are several Python distributions available. One particularly convenient distribution is called Anaconda which contains all necessary libraries to run the PCWG code.
  + To download Anaconda Python go to: <http://continuum.io/downloads>
* **Install GitHub Source Control**:
  + Go to <https://windows.github.com>
  + Download the GitHub client for your operating system
* **Clone the PCWG Repository**
  + Go to <https://github.com/peterdougstuart/PCWG>
  + Click on “Clone in Desktop” (see Figure 1)
  + Select the local directory where you wish to store the PCWG code

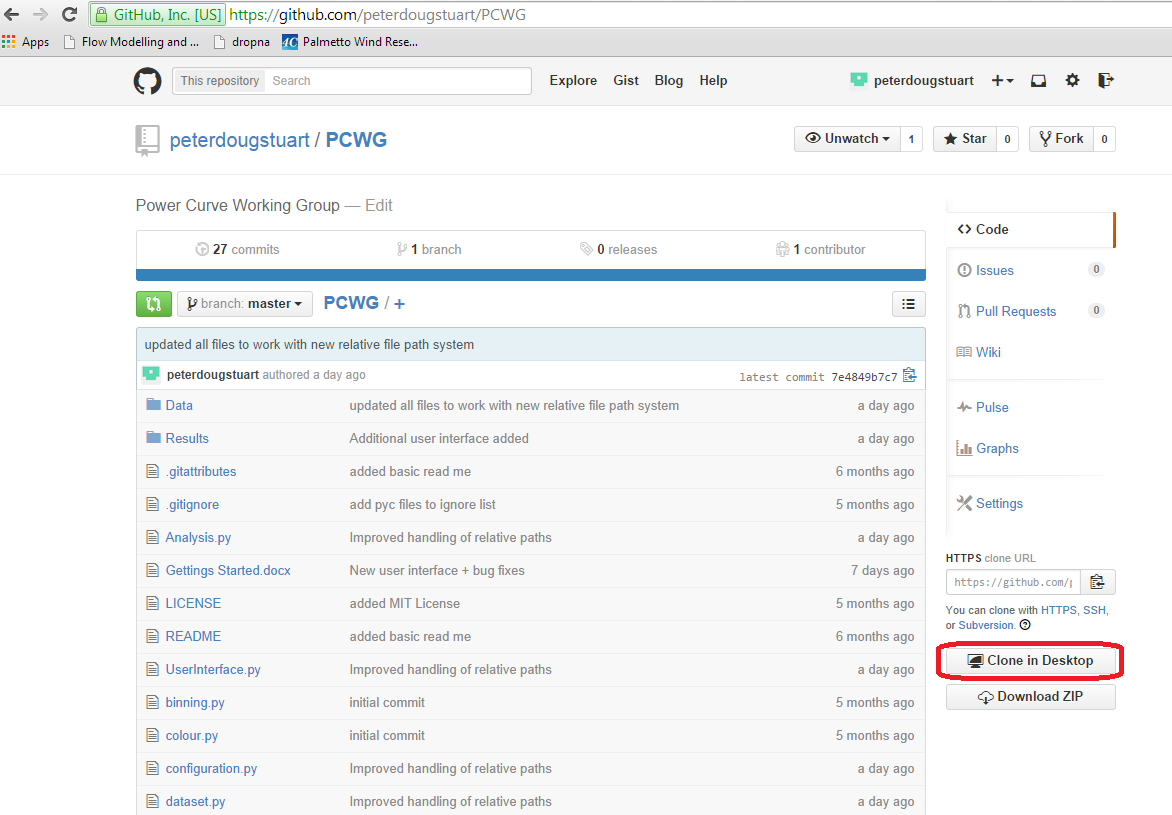


Figure 1. PCWG page on Git Hub

* **Start Integrated Debugging Environment (IDE):**
  + Anaconda comes with a IDE called Spyder which can normally be found in C:\Anaconda\Scripts\spyder.exe.
  + Start Spyder
  + When prompted create a new workspace
  + Goto File > Open, browse to your local PCWG Git folder and open “pcwg-tool.py”
  + Press F5 to run the tool.

## 3 Getting Started

Once the tool is running you should see a screen similar to Figure 2.

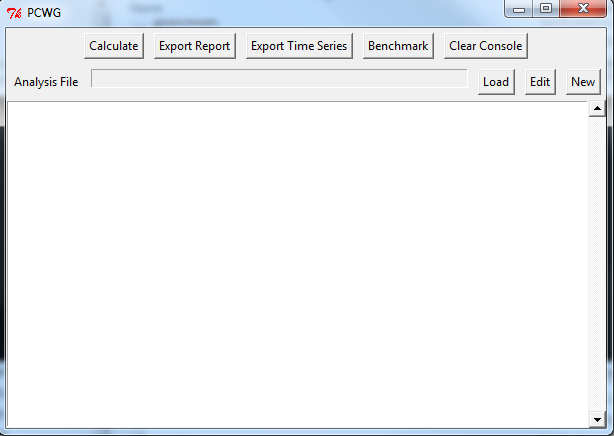


Figure 2. PCWG Tool Home Screen

* To run an example analysis click on the Load button and browse to “Data/Dataset 1 Analysis.xml”. You should see that the file has successfully loaded via the message in the output console (see Figure 3). Note: this example file has been configured to reproduce the results of the PCWG Round Robin Exercises on Dataset 1.

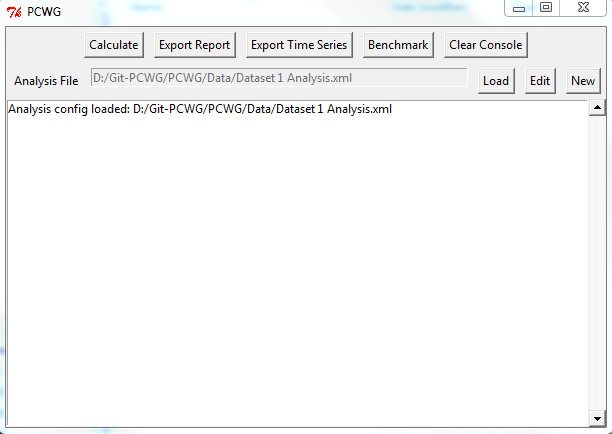


Figure 3. Confirmation of file load in output console

* Once the file has loaded you can inspect the settings by clicking “Edit” (see Figure 3)

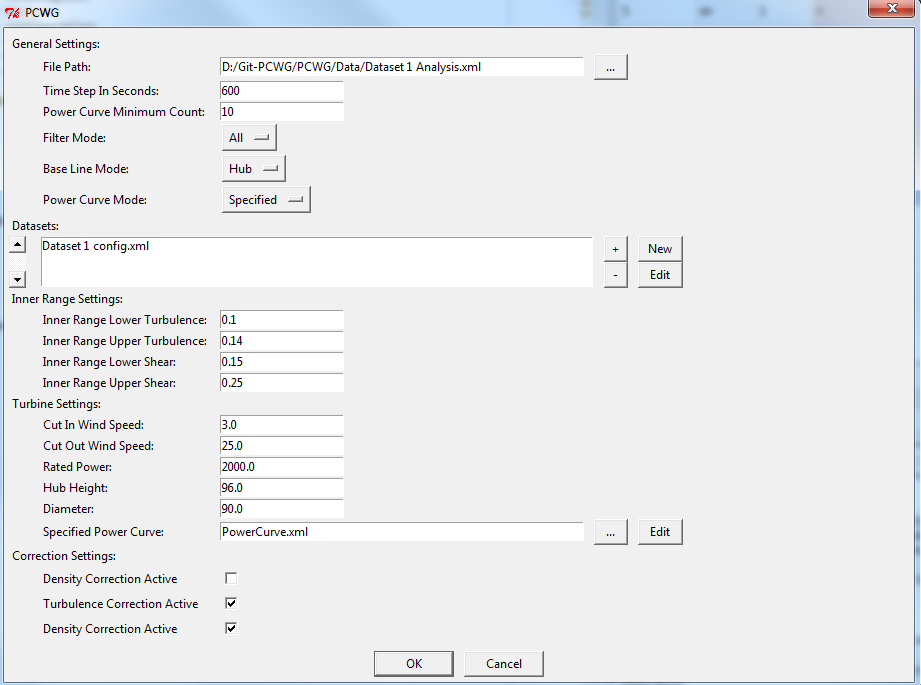


Figure 3. Analysis Settings Dialog

* From the Analysis Settings Dialog click “Cancel” to return to the Home Screen
* To run the calculation click “Calculate”. Note: the calculation currently takes several minutes to complete. As the calculation progresses message will be written to the output console.

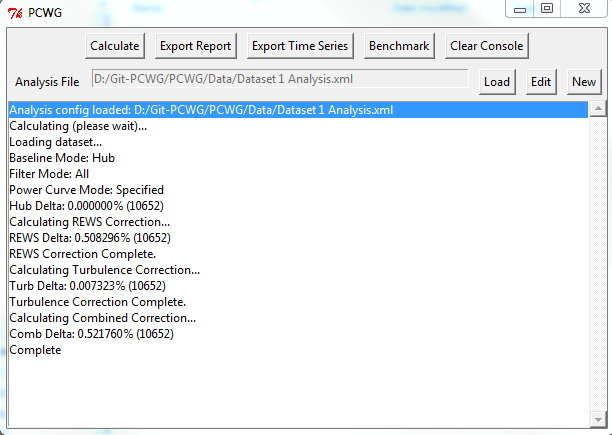


Figure 4. Progress messages displayed in output console

* Once the calculation has completed you can either review the results printed in the output console or export files as follows:
  + Click “Export Report” to export an excel spreadsheet summary.
  + Click “Time Series” to export a “.dat” text file of the calculation results per time step.

## 4 Benchmark versus Excel Consensus Analysis

For convenience the main menu contains a button “Benchmark” which will rerun all PCWG Round Robin Exercises using the tool and compare the results to the Excel consensus analysis.

