**Overview to the scoring of PharmaSCOPE**

PharmaSCOPE outputs a players score, year on year against 5 key metrics:

* Ability to meet demand
* Security of supply
* CAPEX efficiency
* OPEX efficiency
* COG’s efficiency

An explanation of the proposed/ implemented calculation flow and method is provided in each of the sections below:

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| Ability to meet demand | The ability to meet demand score is calculated against each NCE, with the results then aggregated with even weighting to provide an overall ability to meet demand score for the given year. An example of this is provided below:  Actual demand for NCEA= DemNCEA  Actual capacity to produce (i.e line built and commissioned) NCEA= Cap NCEA  Then:  And based on this:  Finally, each NCE’s score is aggregated to give a total ability to meet demand score for the given year as follows: |
| Security of supply | The security of supply score is calculated is calculated in two parts:   * Network Balance * NCE safety supply   Each of these components contributes 50% to the overall security of supply score with the method expanded on below:  **Network Balance:**  For each NCE a binary score is utilised to determine if there is a backup source of supply using the following logic (The NCE must have a demand of greater than 0kg/y for the calculation to be activated):  This is then aggregated for all active NCE’s to determine the total network balance score:  **NCE Safety Supply:**  The networks ability to safely meet demand is also measured by determining the buffer to meet fluctuations in demand and recover from unplanned stoppages. Ideally, the network has a 20% or greater idle capacity in a given year to account for these occurrences. Given this, the NCE safety supply I determined as per the below:  Actual demand for NCEA= DemNCEA  Actual capacity to produce (i.e line built and commissioned) NCEA= Cap NCEA  Then:  And based on this:  Finally, each NCE’s score is aggregated to give a total ability to meet demand score for the given year as follows:  **Score Aggregation**  Finally, to give a total score, the two components are aggregated as below: |
| CAPEX efficiency | The CAPEX efficiency measures the efficiency of the users capital allocation against the optimum capital allocation that could be made for a given year. This does not account for the lead times of building in the computers calculation case and as such the users score should always be below that of the optimum unless all demands are at a steady state. The calculation method is given below:  For each NCE determine the actual demand:  Actual demand for NCEA= DemNCEA  Then determine the nearest capacity build to meet this :  BuildCap (DemNCEA) = x t/y  Then using the tables of batch facility capacities and build costs determine the optimum build cost:  OpBuildCos (x t/y) = $y  This process is then repeated for all products with demand for the given year to determine a total optimum build cost:  TotOpBuilCos = OpBuildCosNCEA + OpBuildCosNCEB……  Lastly an overall result is calculated as per below:  And based on this: |
| OPEX efficiency | The OPEX efficiency measures the efficiency of the users operational allocation against the optimum operational allocation that could be made for a given year. This does not account for the lead times of building in the computers calculation case and as such the users score should always be below that of the optimum unless all demands are at a steady state. The calculation method is given below:  For each NCE determine the actual demand:  Actual demand for NCEA= DemNCEA  Then determine the nearest capacity build to meet this :  BuildCap (DemNCEA) = x t/y  Then using the tables of batch facility capacities and build costs determine the optimum build cost:  OpCos (x t/y) = $y  This process is then repeated for all products with demand for the given year to determine a total optimum operational cost:  TotOpCos = OpCosNCEA + OpCosNCEB……  Lastly an overall result is calculated as per below:  And based on this: |
| COG’s efficiency | The COGs efficiency measures the efficiency of a users production allocation based on the varying costs of production at each of the available sites. This is calculated by:  Determining the optimum cost:  OpCostProdA= MinCostA/t(Site 1 to x) x ActDemNCEA  This is then compared to the actual cost of production:  Lastly an overall result is calculated as per below:  And based on this: |