Supplementary Material 6 Facility parameters

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| --- | --- | --- |
| Facility type, $Ft$ | Contract | Newbuild |
| Facility scale, $Fs$ | Pilot | Pilot | Small | Medium | Large |
| Floorspace, $σ\_{Fs}$ (m2) | N/A | 120 | 300 | 1000 | 3000 |
| Support floorspace, $σ\_{support,Fs}$ (m2) | N/A | 30 | 120 | 250 | 600 |
| Core equipment floorspace, $σ\_{core,Fs}$(m2) | N/A | 42 | 42 | 84 | 168 |
| QC floorspace, $σ\_{QC,Fs}$(m2) | N/A | 25 | 25 | 25 | 50 |
| Support equipment cost,$C\_{support,Fs} $(thousand USD) | N/A | 280 | 300 | 350 | 400 |
| Core equipment cost, $C\_{core,Fs}$ (thousand USD) | N/A | 510 | 630 | 660 | 800 |
| QC equipment cost, $C\_{QC,Fs} $(thousand USD) | N/A | 421 | 421 | 842 | 1684 |
| Contract negotiation costs, $Ctc\_{f}$ (thousand USD) | 25 | N/A | N/A | N/A | N/A |
| Facility Investment cost, $Inv\_{Fs}^{f}$ (thousand USD) | N/A | 2800 | 6000 | 12000 | 20000 |
| Set-up time, $τf\_{Ft,Fs}^{f}$ (years) | 0.5 | 2 | 3 | 3.5 | 4 |
| Equipment # (Simple), $EqNo\_{f,contract, pilot, t}^{Simple}$Equipment # (Complex), $EqNo\_{f,contract, pilot, t}^{Complex}$ | 53 | N/A | N/A | N/A | N/A |
| Facility fixed cost (thousand USD) | 25 | 100 | 150 | 200 | 300 |
| Outsource penalty cost multiplier ($Out\_{Ft}$) | 1.2 | N/A | N/A | N/A | N/A |
| Scale penalty multiplier ($Sp\_{Fs}$) | 1.2 | 1.2 | 1.15 | 1.1 | 1 |