**Table 1** Critical Load Parameters

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CL | Node | Load (kW) | Quality | | |
| *Di* | *Ei* | *Fi* |
| 1 | 8 | 70 | 0.02 | 2 | 200 |
| 2 | 11 | 145 | 0.02 | 3 | 400 |
| 3 | 21 | 110 | 0.02 | 3 | 400 |
| 4 | 29 | 80 | 0.01 | 2 | 200 |
| 5 | 38 | 380 | 0.03 | 5 | 300 |
| 6 | 39 | 380 | 0.03 | 5 | 300 |
| 7 | 48 | 100 | 0.02 | 3 | 400 |
| 8 | 50 | 600 | 0.04 | 4 | 400 |
| 9 | 53 | 200 | 0.03 | 4 | 300 |
| 10 | 68 | 80 | 0.02 | 2 | 200 |

**Table 2** Scenarios for base case

|  |  |  |
| --- | --- | --- |
| Time | Fault Line | Occurrence Probability |
| *t*0 | None | **/** |
| *t*1 | 3-28 | 0.16 |
| *t*2 | 3-28, 4-36, 37-38 | 0.19 |
| *t*3 | 37-38, 38-38, 35-39, 9-42 | 0.22 |
| *t*4 | 9-42, 11-12, 55-56 | 0.12 |
| *t5* | 12-13, 16-17 | 0.14 |
| *t*6 | 15-16, 16-17, 17-18 | 0.20 |
| *t*7 | 41-69 | 0.08 |
| *t*8 | 41-69, 68-69 | 0.13 |

**Table 3** Resilience index before and after trading

|  |  |  |
| --- | --- | --- |
| Time | Resilience Index *RIDN* (kW) | |
| Before Trading | After Trading |
| *t*1 | 246.96 | 86.44 |
| *t*2 | 314.64 | 106.02 |
| *t*3 | 364.32 | 168.43 |
| *t*4 | 198.72 | 75.56 |
| *t5* | 231.84 | 92.26 |
| *t*6 | 331.20 | 102.22 |
| *t*7 | 132.48 | 40.30 |
| *t*8 | 215.28 | 61.94 |