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| **Abbreviations:** | |
| CG | Conventional Generator |
| CVaR | Conditional Value at Risk |
| ESS | Energy Storage System |
| PV | Photovoltaic panels |
| RES | Renewable Energy Sources |
| SLP | Stochastic Linear Programming |
| WT | Wind Turbines |
| **Indices:** | |
|  | Index of nodes with WTs |
|  | Index of nodes with ESSs. |
|  | Index of nodes with CGs. |
|  | Index of nodes/lines. |
|  | Index of nodes with PVs. |
|  | Index of scenarios. |
|  | Index of periods. |
| **Parameters:** | |
|  | Duration of period . |
|  | Per unit confidence level. |
|  | Represents the trade-off between expected cost and risk aversion. |
|  | Self-discharge rate of ESS at node . |
|  | Charging/discharging efficiency of the ESS at node . |
|  | Fuel consumption efficiency of CG at node . |
|  | Occurrence probability of scenario . |
|  | Cost of charging/discharging for the ESS at node . |
|  | Cost of the energy produced by the CG at node . |
|  | Cost of load shedding at node . |
|  | Cost of purchasing energy from the substation at period . |
|  | Initial fuel level of the CG at node . |
|  | Minimum fuel level of CG at node . |
|  | Fuel capacity of the CG at node . |
|  | Volumetric calorific value of fuel for the CG at node . |
|  | Maximum power for charging/discharging of ESS at node . |
|  | Power factor limit of the CG at node . |
|  | Power factor of the load at node . |
|  | Nominal power of PV at node . |
|  | Nominal power of WT at node . |
|  | Resistance/reactance of line . |
|  | Limits for ramping down /up of the CG at node . |
|  | Average load consumption at node , period , scenario . |
|  | Average load consumption at node , period . |
|  | Maximum capacity of the CG located at node . |
|  | Maximum/minimum SOC for the ESS at node . |
|  | Minimum SOC of ESS at node , period *.* |
|  | Initial SOC of the ESS at node . |
|  | Maximum current magnitude at line . |
|  | Maximum/minimum voltage magnitude. |
| **Variables:** | |  |
|  | Auxiliary variable for CVaR calculation. |
|  | Non-negative auxiliary variable for calculating CVaR in scenario . |
|  | Operation cost in scenario . |
|  | Conditional Value at Risk. |
|  | Fuel remaining in CG at node , period , scenario . |
|  | PV/WT generation factor at period , scenario . |
|  | Square of the magnitude of current flow on line , period , scenario . |
|  | Active/reactive generation of the CG at node , period , scenario . |
|  | Charging/discharging power of the ESS at node b, period , scenario . |
|  | Purchased active/reactive power from the substation , period , scenario . |
|  | Active/reactive power flow in line , period , scenario . |
|  | Load curtailment at node , period , scenario . |
|  | SOC of the ESS at node , period , scenario . |
|  | Square of the voltage magnitude at node , period , scenario . |