Example draft milestones have been created per theme and technical assistance topic, listed below

**1.1 Advanced Data Analytics and Modeling**

|  |  |  |
| --- | --- | --- |
| **Task** | **Deliverable** | **Cost****(firm fixed)** |
| **Task 1.**  Kickoff meeting between DOE and Project Team **Milestone**: Establish the team, timeline, and next steps**Expected Duration:** Day 1 | e.g., pdf/PowerPoint slides of meeting plan | $ |
| **Task 2.**  Data Collection and Model Setup* Gather historical weather data and predictive climate models relevant to the project scope
* Develop initial grid performance models using the collected data

**Milestone**: Completion of data collection and initial model setup**Expected Duration:** Month 3 | * Data collection report
* Initial model setup documentation

Summarized in a quarterly technical report | $ |
| **Task 3:** Simulation and Analysis* Conduct simulations to predict grid performance under various weather scenarios
* Analyze simulation results to identify potential vulnerabilities and performance issues

**Milestone(s):** Completion of initial simulations and preliminary analysis**Expected Duration:** Month 6 | Simulation results and analysis report in a quarterly technical report | $ |
| **Task 4.**  Final Validation* Validate the models and simulations with real-world data

**Milestone**: Final validation of models and simulations**Expected Duration:** Month 9 | Final validated models in a quarterly technical report |  $ |
| **Task 4.**  Final Reporting* Compile findings into a comprehensive final report

**Milestone**: Submission of final report**Expected Duration:** Month 12 | Comprehensive final report summarizing all efforts, results and recommendations | $ |
| \*Add additional rows as necessary |  |  $ |
|  |  | [TOTAL BUDGET] |

**1.2 Digital Twin Development**

|  |  |  |
| --- | --- | --- |
| **Task** | **Deliverable** | **Cost****(firm fixed)** |
| **Task 1.**  Kickoff meeting between DOE and Project Team**Milestone**: Establish the team, timeline, and next steps**Expected Duration:** Day 1 | e.g., pdf/PowerPoint slides of meeting plan | $ |
| **Task 2.**  Digital Twin Prototype Development* Develop initial digital twin prototypes of key grid infrastructure components
* Ensure the accuracy and functionality of the prototypes

**Milestone**: Completion of digital twin prototypes**Expected Duration:** Month 3 | Digital twin development report summarized in a quarterly technical report | $ |
| **Task 3:** Testing and Validation* Conduct detailed testing and validation of the digital twins
* Refine the models based on testing results

**Milestone(s):** Completion of initial testing and validation**Expected Duration:** Month 6 | Testing and validation documentation summarized in a quarterly technical report | $ |
| **Task 4.**  Integration* Integrate the validated digital twins into grid planning and operations

**Milestone**: Integration into grid planning and operations**Expected Duration:** Month 9 | Integration guidelines summarized in a quarterly technical report |  $ |
| **Task 4.**  Final Reporting* Compile findings into a comprehensive final report

**Milestone**: Submission of the final report**Expected Duration:** Month 12 | Comprehensive final report summarizing all efforts, results and recommendations | $ |
| \*Add additional rows as necessary |  |  $ |
|  |  | [TOTAL BUDGET] |

**1.3 Climate Data and Guidance**

|  |  |  |
| --- | --- | --- |
| **Task** | **Deliverable** | **Cost****(firm fixed)** |
| **Task 1.**  Kickoff meeting between DOE and Project Team **Milestone**: Establish the team, timeline, and next steps**Expected Duration:** Day 1 | e.g., pdf/PowerPoint slides of meeting plan | $ |
| **Task 2.**  Climate Data Collection and Gap Analysis* Collect relevant climate data and identify data gaps
* Conduct a comprehensive analysis of the collected data

**Milestone**: Completion of climate data collection and gap analysis**Expected Duration:** Month 3 | Climate data assessment report summarized in a quarterly technical report | $ |
| **Task 3:** Development of Climate Guidance* Develop guidance based on analyzed climate data
* Ensure the guidance supports resilience planning efforts

**Milestone(s):** Development of climate guidance**Expected Duration:** Month 6 | Climate guidance documents summarized in a quarterly technical report | $ |
| **Task 4.**  Integration* Integrate the climate guidance into grid resilience planning

**Milestone**: Integration into resilience planning**Expected Duration:** Month 9 | Integration reports summarized in a quarterly technical report |  $ |
| **Task 4.**  Final Reporting* Compile findings into a comprehensive final report

**Milestone**: Submission of the final report**Expected Duration:** Month 12 | Comprehensive final report summarizing all efforts, results and recommendations | $ |
| \*Add additional rows as necessary |  |  $ |
|  |  | [TOTAL BUDGET] |

**2.1 Risk Assessments and Resilience Strategies**

|  |  |  |
| --- | --- | --- |
| **Task** | **Deliverable** | **Cost****(firm fixed)** |
| **Task 1.**  Kickoff meeting between DOE and Project Team**Milestone**: Establish the team, timeline, and next steps**Expected Duration:** Day 1 | e.g., pdf/PowerPoint slides of meeting plan | $ |
| **Task 2.**  Risk Assessment* Conduct detailed risk assessments for the grid infrastructure
* Identify critical vulnerabilities and potential impact areas

**Milestone**: Completion of risk assessment**Expected Duration:** Month 3 | Risk assessment report summarized in a quarterly technical report | $ |
| **Task 3:** Strategy Development* Develop initial resilience strategies based on assessment results

**Milestone(s):** Development of initial resilience strategies**Expected Duration:** Month 6 | Initial resilience strategy documentation summarized in a quarterly technical report | $ |
| **Task 4.**  Testing and Optimization * Use backtesting to evaluate the effectiveness of the strategies
* Optimize resilience strategies based on backtesting results

**Milestone**: Completion of backtesting and strategy optimization**Expected Duration:** Month 9 | Backtesting and optimization report summarized in a quarterly technical report |  $ |
| **Task 4.**  Implementation* Implement the optimized strategies and monitor their effectiveness

**Milestone**: Full implementation of resilience strategies**Expected Duration:** Month 12 | Comprehensive final report including the implementation report and summarizing all efforts, results and recommendations | $ |
| \*Add additional rows as necessary |  |  $ |
|  |  | [TOTAL BUDGET] |

**2.2 Failure-Mode Studies and Accelerated Lifetime Testing**

|  |  |  |
| --- | --- | --- |
| **Task** | **Deliverable** | **Cost****(firm fixed)** |
| **Task 1.**  Kickoff meeting between DOE and Project Team**Milestone**: Establish the team, timeline, and next steps**Expected Duration:** Day 1 | e.g., pdf/PowerPoint slides of meeting plan | $ |
| **Task 2.**  Failure-Mode Analysis* Conduct detailed failure-mode studies for critical grid components
* Identify potential points of failure and associated risks

**Milestone**: Completion of failure-mode analysis**Expected Duration:** Month 3 | Failure-mode analysis report summarized in a quarterly technical report | $ |
| **Task 3:** Accelerated Lifetime Testing* Perform accelerated lifetime testing on critical components
* Collect and analyze data to assess durability

**Milestone(s):** Completion of accelerated lifetime testing**Expected Duration:** Month 6 | Lifetime testing results summarized in a quarterly technical report | $ |
| **Task 4.**  Implementation* Implement durability improvements based on testing results

**Milestone**: Implementation of durability improvements**Expected Duration:** Month 9 | Recommendations for durability improvements summarized in a quarterly technical report |  $ |
| **Task 4.**  Final Reporting* Compile findings into a comprehensive final report

**Milestone**: Submission of the final report**Expected Duration:** Month 12 | Comprehensive final report summarizing all efforts, results and recommendations | $ |
| \*Add additional rows as necessary |  |  $ |
|  |  | [TOTAL BUDGET] |

**2.3 Asset Exposure and Vulnerability**

|  |  |  |
| --- | --- | --- |
| **Task** | **Deliverable** | **Cost****(firm fixed)** |
| **Task 1.**  Kickoff meeting between DOE and Project Team**Milestone**: Establish the team, timeline, and next steps**Expected Duration:** Day 1 | e.g., pdf/PowerPoint slides of meeting plan | $ |
| **Task 2.**  Vulnerability Assessment* Assess vulnerabilities of grid components and assets

**Milestone**: Completion of initial vulnerability assessment**Expected Duration:** Month 3 | Vulnerability assessment report summarized in a quarterly technical report | $ |
| **Task 3:** Strategy Development* Develop strategies to mitigate identified vulnerabilities

**Milestone(s):** Development of initial mitigation strategies**Expected Duration:** Month 6 | Mitigation strategy documents summarized in a quarterly technical report | $ |
| **Task 4.**  Strategy Implementation* Implement strategies to mitigate identified vulnerabilities

**Milestone**: Implementation of mitigation strategies**Expected Duration:** Month 9 | Implementation reports summarized in a quarterly technical report |  $ |
| **Task 4.**  Monitoring and Final Reporting* Monitor and adjust mitigation strategies as needed
* Compile findings into a comprehensive final report

**Milestone**: Monitoring throughout the project duration and final adjustments and submission of the final report**Expected Duration:** Month 12 | Comprehensive final report including monitoring reports, adjustment documentation and summarizing all efforts, results and recommendations | $ |
| \*Add additional rows as necessary |  |  $ |
|  |  | [TOTAL BUDGET] |

**3.1 Investment Planning**

|  |  |  |
| --- | --- | --- |
| **Task** | **Deliverable** | **Cost****(firm fixed)** |
| **Task 1.**  Kickoff meeting between DOE and Project Team **Milestone**: Establish the team, timeline, and next steps**Expected Duration:** Day 1 | e.g., pdf/PowerPoint slides of meeting plan | $ |
| **Task 2.**  Cost-Benefit Analysis* Perform detailed cost-benefit analyses for potential resilience investments
* Identify the most cost-effective resilience measures

**Milestone**: Completion of the initial cost-benefit analysis**Expected Duration:** Month 3 | Cost-benefit analysis report summarized in a quarterly technical report | $ |
| **Task 3:** Investment Planning* Develop prioritized investment plans based on analysis results

**Milestone(s):** Development of draft investment plan**Expected Duration:** Month 6 | Draft investment plan summarized in a quarterly technical report | $ |
| **Task 4.**  Investment Roadmap * Create a strategic roadmap for implementation

**Milestone**: Finalization of investment plan**Expected Duration:** Month 9 | Final investment plan summarized in a quarterly technical report |  $ |
| **Task 4.**  Final Reporting* Compile findings and recommendations into a comprehensive final report

**Milestone**: Submission of the final report**Expected Duration:** Month 12 | Comprehensive final report summarizing all efforts, results and recommendations | $ |
| \*Add additional rows as necessary |  |  $ |
|  |  | [TOTAL BUDGET] |

**3.2 Real-World Testing and Simulation**

|  |  |  |
| --- | --- | --- |
| **Task** | **Deliverable** | **Cost****(firm fixed)** |
| **Task 1.**  Kickoff meeting between DOE and Project Team**Milestone**: Establish the team, timeline, and next steps**Expected Duration:** Day 1 | e.g., pdf/PowerPoint slides of meeting plan | $ |
| **Task 2.**  Testing Environmental Setup* Establish testing environments that replicate real-world conditions
* Ensure all necessary equipment and tools are in place

**Milestone**: Completion of testing environmental setup**Expected Duration:** Month 3 | Testing protocols documentation summarized in a quarterly technical report | $ |
| **Task 3:** Testing and Simulation* Conduct real-world tests and simulations of resilience measures
* Collect and analyze data from tests and simulations

**Milestone(s):** Completion of initial tests and simulations**Expected Duration:** Month 6 | Real-world testing results summarized in a quarterly technical report | $ |
| **Task 4.**  Validation * Validate the effectiveness of resilience measures

**Milestone**: Final validation of resilience measures**Expected Duration:** Month 9 | Simulation validation reports summarized in a quarterly technical report |  $ |
| **Task 4.**  Final Reporting* Compile findings and recommendations into a comprehensive final report

**Milestone**: Submission of the final report**Expected Duration:** Month 12 | Comprehensive final report summarizing all efforts, results and recommendations | $ |
| \*Add additional rows as necessary |  |  $ |
|  |  | [TOTAL BUDGET] |

**3.3 Environmental and Sustainability Standards Support**

|  |  |  |
| --- | --- | --- |
| **Task** | **Deliverable** | **Cost****(firm fixed)** |
| **Task 1.**  Kickoff meeting between DOE and Project Team**Milestone**: Establish the team, timeline, and next steps**Expected Duration:** Day 1 | e.g., pdf/PowerPoint slides of meeting plan | $ |
| **Task 2.**  Environmental Impact Assessment* Conduct comprehensive environmental impact assessments
* Identify areas of non-compliance and potential improvements

**Milestone**: Completion of environmental impact assessment**Expected Duration:** Month 3 | Environment impact assessment report summarized in a quarterly technical report | $ |
| **Task 3:** Development of Sustainability Strategies* Develop strategies to achieve sustainability targets
* Ensure strategies align with environmental regulations

**Milestone(s):** Development of sustainability strategies**Expected Duration:** Month 6 | Sustainability strategy documents summarized in a quarterly technical report | $ |
| **Task 4.**  Implementation* Implement sustainability strategies and monitor compliance

**Milestone**: Full implementation of strategies**Expected Duration:** Month 9 | Compliance reports summarized in a quarterly technical report |  $ |
| **Task 4.**  Final Reporting* Compile findings into a comprehensive final report

**Milestone**: Submission of the final report**Expected Duration:** Month 12 | Comprehensive final report summarizing all efforts, results and recommendations | $ |
| \*Add additional rows as necessary |  |  $ |
|  |  | [TOTAL BUDGET] |