CEMM Scientific & Technical Product QA Review Form

Product Information (*To be completed by Product Contact*)		
RAP Project/Task ID:		
Scientific/Technical Product Title:	Contribution of Offshore Wind to the Grid Mix and Air Quality Implications: U.S. National Approach	
Product Type[1] / Product Sub-Type[2]:	Journal article	
Product Contact / Organization:	Morgan Browning	
Lead Author / Organization:	Morgan Browning and Carol Lenox	
Product Category:	☐ HISA (Highly Influential Scientific Assessment) ☐ ISI (Influential Scientific Information) ☐ High Profile and/or Policy Relevant (Not HISA or ISI) ☒ None of the above	
Associated QAPP Title(s) / Date(s):	6/10/2017	
QAPP Tracking Number(s):		**QA Category (check one):** ☐ **A** ☒ **B**

QA Review Report

QA Manager (QAM): Christine Alvarez	**Date Product Received by QAM:** 12/16/19

- ☒ **Approved** – Approved QAPP[3] identified for the product. If the product was reviewed, no deficiencies[4] were identified in the product.
- ☐ **Approved with Minor Revisions** – Approved QAPP identified for the product. If the product was reviewed, observations[5] were identified in the product that should be addressed, but no additional QA review is required.
- ☐ **Not Approved** – Approved QAPP identified for the product. Findings[6] were identified in the product that require corrective action. A response to each finding, along with corrected text, must be provided for additional QA review.
- ☐ **No approved QAPP was identified for the product**
- ☐ **QA requirements are not applicable to this product**

Comments: The journal article addresses an energy system modeling approach to generate and explore potential energy futures. The Integrated MARKAL-EFOM System (TIMES) energy system model and a database representation of the U.S. energy system applying a nested parametric sensitivity analysis to represent potential futures.

According to the QAPP, the Energy and Climate Assessment Team (ECAT) is utilizing a well-established energy-modeling framework (the MARKAL/TIMES model) to organize the performance, cost, usage, emissions, and constraint data for all current and future technologies in the US energy system. The QAPP also states that "Scenario analyses addressing such questions as: what are the impacts of future energy and technology options on air quality and climate change, what energy technology future pathways at a national, regional, or state scale most effectively mitigate climate change and minimize unintended consequences, what are the key interactions between energy technology choices and adaptation policies, how can the energy system evolve to reduce multi-media impacts and move towards sustainability, and what are the effects of human choice on the demand side of the energy system." In addition, the QAPP states data from literature can be used.

The baseline scope of the QAPP identified above supports the journal article cited within this document. For products that are QA Category B, the QA/QC measures stated within the QAPP are not independently

confirmed by the QAM. Product review for Category B product reviews includes ensuring the product covers the scope outlined in the QAPP(s).

Alvarez, Christine

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Date: 2019.12.18 10:52:18 -05'00'

QA Manager Signature & Date

[1]**Product Type:** Note that posters, presentations, and abstracts do NOT require a QA review.
[2]**Product Type (Sub-Type):** Book, Book Chapter, Internal Report, EPA Published Proceedings, Paper in EPA Proceedings, Non-EPA Published Proceedings, Paper in Non-EPA Proceedings, Newsletter, Unpublished Report, Data (Database, Map, Model, Scientific Data, Software, Spreadsheet), Journal Article (Non-Peer Reviewed, Peer Reviewed), Abstract, Presentation (Poster, Slide), Published Report (Guidance Document, Handbook, Issue Paper, Manual, Methodology, Report (default), Technology Transfer, User's Guide)
[3]**QAPP:** Specific QA project planning documentation developed and approved prior to (a) the collection, evaluation, use (including use of non-EPA collected data or research [i.e., existing data] such as results from literature searches), generation, or reporting of environmental data by or for EPA, or (b) the design, construction, and operation of environmental technology by EPA (including software, models, and methods) for environmental programs as identified in EPA CIO Order 2105.0, Section 5, *Scope and Field of Application*.
[4]**Deficiency:** Unauthorized deviation from acceptable procedures or practices, or a defect in an item.
[5]**Observation:** Assessment conclusion that identifies a deficiency which has the potential to have a significant impact on an item or activity. An observation may identify a deficiency which does not yet cause a degradation in quality.
[6]**Finding:** Assessment conclusion that identifies a deficiency having a significant effect on an item or activity.