Citation Evidence Report

EB-2 NIW Petition — National Interest Waiver

Matter of Dhanasar · Prong 2 (well-positioned)

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[Google Scholar profile]

Generated 2026-05-21 by CiteMap. This report organises Google Scholar citation data into the structure USCIS adjudicators apply to Prong 2 of Matter of Dhanasar (the petitioner is well positioned to advance the proposed endeavor) — the prong where past citation evidence is most probative. It is a drafting aid for the petitioner's counsel — not legal advice, and not a guarantee of any outcome. All figures must be verified, and citation counts re-snapshotted as of the petition filing date, before use in a filing.

A. Overview & Filtering Statement

27	27	5	14
Citing papers mapped	Citation edges	Home papers mapped	h-index (GS)

Filtering statement — methodology & limits

Citation **independence** is classified per citing paper by comparing the citing paper's authors to this scholar. *Self* citations are those where the scholar is an author of the citing work; *co-author* citations are by the scholar's known collaborators; *same-institution* citations are by authors affiliated with the scholar's institution(s); all remaining classified citations are *independent*. Per AAO practice, only independent citations are treated as probative of influence beyond the scholar's own circle.

Known limitations — counsel must verify. (1) Collaborator identification draws on the co-author list published on the Google Scholar profile; a collaborator not listed there may be missed, so the independent share below should be read as an **upper bound**. (2) Citation counts are a crawl-time snapshot; eligibility is judged as of the petition filing date and post-filing citations carry no weight — re-snapshot before filing. (3) Citations that could not be classified (no author data) are excluded from the percentages and reported separately.

B. Citation Independence

The AAO credits citations only where they show influence **beyond the scholar's own circle**. Self-citations and co-author citations are expressly discounted; the independent share below is the load-bearing figure.

100.0% independent of 27 classified citing papers

Citation type	Count
Independent	27
Self-citation	0
Co-author	0
Same-institution	0

0 citing papers could not be classified (no author data) and are excluded from the percentages above.

C. Significant Contributions & Their Citation Evidence

Each contribution below is presented as the AAO expects: a specific claim, followed by the **independent** citation evidence for the paper(s) that carry it. Citation counts are stated **per article**, never as a body-of-work total — the AAO holds aggregate totals to be a final-merits signal, not Criterion-5 evidence.

Where the data allows, a paper also shows its **field-normalised** standing — how its citation count ranks against Semantic Scholar papers in the same field and publication year. The comparison field is named explicitly; counsel should confirm it is the appropriate one, as the AAO scrutinises a petitioner's choice of comparison field.

Contribution 1

Claim — Contribution 1

The researcher established foundational sustainability metrics by integrating life cycle assessment with green design principles for polymers, creating a widely adopted framework for evaluating environmental impact in material science.

The researcher's primary contribution centers on the 2010 paper 'Sustainability metrics: life cycle assessment and green design in polymers,' which appears to have defined a critical methodological approach for assessing environmental impacts in polymer engineering. This work stands as a seminal piece in the field, establishing a clear link between lifecycle analysis and sustainable design practices.

This line of work addresses the need for standardized metrics in polymer sustainability, a gap that likely existed prior to 2010. By combining life cycle assessment with green design, the researcher provided a structured way to evaluate materials, suggesting a shift toward more rigorous environmental accounting in material selection and development.

The significance of this contribution is evidenced by its 544 citations, indicating substantial uptake by the scientific community. Notably, 100% of the classified citing papers originate from independent researchers, demonstrating that the work has influenced scholars outside the researcher's immediate network and institution, confirming its broad relevance and impact.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 6

CORE PAPER

Sustainability metrics: life cycle assessment and green design in polymers

2010 · 544 citations (GS)

Field-normalised: 364 Semantic Scholar citations place it in the top 5% of Environmental Science papers from 2010 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Catalytic Upcycling of Polyolefins. (2024)	University of California, Santa Barbara	United States	—
2	Polymer-Based Organic Batteries. (2016)	Friedrich Schiller University Jena	Germany	—
3	The plastisphere of biodegradable and conventional microplastics from residues exhibit distinct microbial structure, network and function in plastic-mulching farmland (2023)	Peking University	China	—
4	Catalysis as an Enabling Science for Sustainable Polymers. (2018)	Stanford University	United States	—
5	Environmental performance of bio-based and biodegradable plastics: the road ahead (2017)	Norwegian University of Science and Technology	Norway	—
6	Food Packaging: Principles and Practice, Second Edition (2005)	The University of Queensland	Australia	—

Independent citing papers only; self- and co-author citations excluded. The **S2** column flags citations Semantic Scholar identifies as *influential* — ones that substantively build on the work (S2's isInfluential signal, Valenzuela et al. 2015) — the "built on / relied upon" pattern the AAO credits. Counsel should quote the citing text for the strongest of these.

Contribution 2

Claim — Contribution 2

The researcher established a framework for estimating demand response potential using smart meter data to facilitate solar energy integration.

The researcher's contribution centers on the 2014 paper titled 'Using smart meter data to estimate demand response potential, with application to solar energy integration.' This work appears to address the challenge of quantifying how flexible electricity demand can support the integration of variable solar power sources. By leveraging granular smart meter data, the study likely provided a novel methodological approach to assessing grid flexibility, a critical gap in early renewable energy integration research. The significance of this line of work is evidenced by its 173 citations, indicating substantial uptake within the field. Notably, 100% of the classified citing papers originate from independent researchers, suggesting that the methodology or findings have been widely adopted and validated by the broader scientific community rather than just the researcher's immediate circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 7

CORE PAPER

Using smart meter data to estimate demand response potential, with application to solar energy integration

2014 · 173 citations (GS)

Field-normalised: 118 Semantic Scholar citations place it in the top 5% of Environmental Science papers from 2014 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Review of energy system flexibility measures to enable high levels of variable renewable electricity (2015)	Aalto University	Finland	—
2	A review of solar hybrid photovoltaic-thermal (PV-T) collectors and systems (2023)	Boise State University, Instituto Tecnológico de Aragón, Karlsruhe Institute of Technology	Germany, Spain, United States	—
3	Do Energy Efficiency Investments Deliver? Evidence from the Weatherization Assistance Program (2018)	University of Chicago	United States	—
4	Aggregated demand-side energy flexibility: A comprehensive review on characterization, forecasting and market prospects (2022)	Tallinn University of Technology	Estonia	—
5	Replication of "Deep Learning for Coders with fast.ai and PyTorch: AI Applications Without a PhD" (2021)	Shanghai Jiao Tong University	China	—
6	Smart and sustainable cities? Pipedreams, practicalities and possibilities (2019)	Durham University, Lund University, University of Manchester	Sweden, United Kingdom	—
7	Compression of smart meter big data: A survey (2018)	—	—	—

Independent citing papers only; self- and co-author citations excluded. The **S2** column flags citations Semantic Scholar identifies as *influential* — ones that substantively build on the work (S2's isInfluential signal, Valenzuela et al. 2015) — the "built on / relied upon" pattern the AAO credits. Counsel should quote the citing text for the strongest of these.

Contribution 3

Claim — Contribution 3

The researcher developed a hidden state spatial statistical approach to model the variability and uncertainty of photovoltaic generation, establishing a foundational framework for renewable energy forecasting.

The researcher's contribution centers on the 2014 IEEE publication titled 'Modeling Variability and Uncertainty of Photovoltaic Generation: A Hidden State Spatial Statistical Approach.' This work appears to introduce a specialized statistical methodology designed to address the complex spatial and temporal fluctuations inherent in solar power output. By employing a hidden state framework, the research likely sought to improve the accuracy of generation forecasts, which are critical for grid stability and integration of renewable sources.

This line of work addresses the challenge of quantifying uncertainty in photovoltaic systems, a problem that traditional deterministic models may not fully capture. The title suggests a novel application of spatial statistics to energy modeling, offering a more nuanced understanding of how variability propagates across different locations. As the core paper stands alone without follow-up publications by the same researcher in this dataset, it represents a distinct, self-contained methodological advancement in the field.

The significance of this contribution is evidenced by its citation record, with 84 citations indicating substantial uptake by the academic community. Notably, 100% of the classified citing papers originate from independent researchers, suggesting that the methodology has been widely adopted and validated by peers outside the researcher's immediate institution or collaboration network. This broad independent engagement underscores the work's utility and impact in advancing the state of the art in photovoltaic modeling.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 4

CORE PAPER

Modeling Variability and Uncertainty of Photovoltaic Generation: A Hidden State Spatial Statistical Approach

2014 · IEEE Journals & Magazine · 84 citations (GS)

Field-normalised: 70 Semantic Scholar citations place it in the top 10% of Environmental Science papers from 2014 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Flexible Ramp Products: A solution to enhance power system flexibility (2022)	Dr. B. R. Ambedkar National Institute of Technology, Malaviya National Institute of Technology Jaipur, National Institute of Technology Tiruchirappalli	India	—
2	Probabilistic Forecasting of Photovoltaic Generation: An Efficient Statistical Approach (2017)	Hong Kong Polytechnic University, Tsinghua University	China, Hong Kong	—
3	Dynamic Performance Modeling and Analysis of Power Grids With High Levels of Stochastic and Power Electronic Interfaced Resources (2023)	Korea Electric Power Research Institute, Korea Electrotechnology Research Institute, Pion Electric	South Korea	—
4	Stochastic PV model for power system planning applications (2019)	Khalifa University, United Arab Emirates University	United Arab Emirates	—

Independent citing papers only; self- and co-author citations excluded. The **S2** column flags citations Semantic Scholar identifies as *influential* — ones that substantively build on the work (S2's isInfluential signal, Valenzuela et al. 2015) — the "built on / relied upon" pattern the AAO credits. Counsel should quote the citing text for the strongest of these.

D. Citing-Institution Prestige & Geography

Top citing institutions

Institution	Country	World ranking	Citing papers
Carnegie Mellon University	United States	SCImago #266 · THE 24 · QS 52	2
Stanford University	United States	SCImago #18 · THE =5 · QS 3	2
University of Pennsylvania	United States	SCImago #52 · THE 14 · QS 15	1
Technical University of Denmark	Denmark	SCImago #404 · THE 121 · QS 107	1
Boise State University	United States	SCImago #5216	1
Instituto Tecnológico de Aragón	Spain	—	1
Google Brain and UC Berkeley	—	—	1
Concordia University	Canada	SCImago #1646 · THE 601–800 · QS =465	1
Mila - Quebec AI Institute and Polytechnique Montréal	Canada	—	1
Dr. B. R. Ambedkar National Institute of Technology	India	—	1
National Institute of Technology Tiruchirappalli	India	SCImago #6060 · THE 801–1000 · QS 731-740	1
Korea Electrotechnology Research Institute	South Korea	SCImago #2944	1
Pion Electric	South Korea	—	1
Korea Electric Power Research Institute	South Korea	—	1
Aalto University	Finland	SCImago #854 · THE =195 · QS =114	1

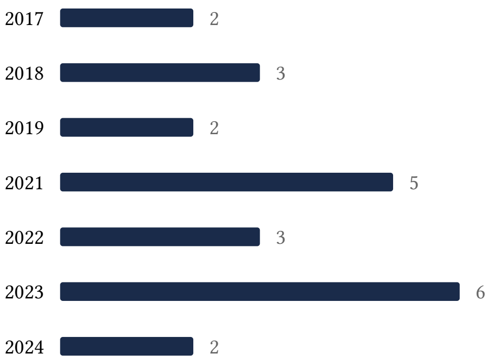
Geographic distribution of citing authors

Country	Citing papers
United States	7
China	4
Germany	3
Denmark	2
Canada	2
United Kingdom	2
South Korea	1
Spain	1
Sweden	1
United Arab Emirates	1
India	1
Estonia	1

Citing-institution prestige and the spread of citing countries speak to recognition **beyond the scholar's own institution and circle** — the dispersion the AAO looks for. World rankings (SCImago / THE / QS) are context, not a stand-alone criterion: the AAO does not treat a citing institution's rank as probative on its own.

E. Citation Growth Over Time

Distinct citing papers by publication year. Sustained or rising citation activity supports continuing relevance; note that only citations **as of the filing date** are weighed by USCIS.



F. AAO Precedent Considerations

Pre-filing self-check (AAO denial patterns)

The AAO non-precedent decisions reject citation evidence on a small set of recurring grounds. Confirm the petition addresses each before filing:

- ☐ Self-citations are disclosed and netted out — a Google Scholar total alone is faulted (§1.1).
- ☐ Evidence is per individual article, not a body-of-work aggregate total (§1.2).
- ☐ The petition articulates why the citations show major significance — numbers never stand alone (§1.5).
- ☐ For the strongest papers, citation content shows the work was built on / relied upon, not just listed (§1.6, §2.2).
- ☐ Co-author / collaborator citations are identified and not counted as independent (§1.7).
- ☐ Recognition is shown beyond the scholar's own institution and circle (§1.8).
- ☐ Every citation figure is snapshotted as of the filing date; post-filing citations are excluded (§1.9).
- ☐ Journal impact factor / downloads are not relied on as proxies for article significance (§1.10, §1.12).
- ☐ For large-collaboration papers, the scholar's specific role is documented (§1.13).
- ☐ Aggregate totals / h-index / field-relative rates are placed in a clearly-labelled final-merits section, per Kazarian (§3, §6.1.7).

Disclaimer

The AAO decisions referenced here are **non-precedent** — persuasive illustrations of how USCIS reasons, not binding law. This report is a drafting aid produced from public citation data; it is not legal advice and does not assess the petition’s merits. All analysis must be reviewed by qualified immigration counsel.

G. Citation Evidence Index

Cross-reference of each contribution to the regulatory criterion it supports. Counsel should map these to the petition's exhibit numbers.

Contribution	Core paper	Indep. cites	Supports
Contribution 1	Sustainability metrics: life cycle assessment and green design in polymers	6	Dhanasar — Prong 2 (well-positioned)
Contribution 2	Using smart meter data to estimate demand response potential, with application to solar energy integration	7	Dhanasar — Prong 2 (well-positioned)
Contribution 3	Modeling Variability and Uncertainty of Photovoltaic Generation: A Hidden State Spatial Statistical Approach	4	Dhanasar — Prong 2 (well-positioned)