

Committee on Science, Space, and Technology
U.S. House of Representatives
 Witness Disclosure Requirement - "Truth in Testimony"
 Required by House Rule XI, Clause 2(g)(5)

1. Your Name: <u>Harry A. Atwater</u>		
2. Are you testifying on behalf of the Federal, or a State or local government entity?	Yes	No ✓
3. Are you testifying on behalf of an entity that is not a government entity?	Yes ✓	No
4. Other than yourself, please list which entity or entities you are representing: <u>Joint Center for Artificial Photosynthesis, California Institute of Technology.</u>		
5. Please list any Federal grants, cooperative agreements, or contracts (including subgrants or subcontracts) that <u>you or the entity you represent have received</u> on or after October 1, 2012: <u>Please attached pages "Current Federal Grants and contracts for Harry A. Atwater"</u>		
6. Please list any foreign government payments that <u>you or the entity you represent have received</u> on or after October 1, 2012: <u>none</u>		
7. If your answer to the question in item 3 in this form is "yes," please describe your position or representational capacity with the entity(ies) you are representing: <u>Director, Joint Center for Artificial Photosynthesis</u>		
8. If your answer to the question in item 3 is "yes," do any of the entities disclosed in item 4 have parent organizations, subsidiaries, or partnerships that you are not representing in your testimony?	Yes	No ✓
9. If the answer to the question in item 3 is "yes," please list any Federal grants, cooperative agreements, or contracts (including subgrants or subcontracts) that were received by the entities listed under the question in item 4 on or after October 1, 2012, that exceed 10 percent of the revenue of the entities in the year received, including the source and amount of each grant or contract to be listed:		

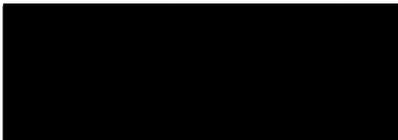
I certify that the above information is true and correct.

Signature:

Date: 6/14/2015

False Statements Act Certification

You are specifically advised that providing false information to this Committee/Subcommittee, or concealing material information from this Committee/Subcommittee, is a crime, and you can be punished for that. If you acknowledge this, please sign the bottom of this form and return to the Committee. This form will be made part of the hearing record.



6/14/2015

Date

June 14, 2015

Current Federal Grants and Contracts for Harry A. Atwater

Investigator: Atwater, Harry A.	Other Agencies to which this proposal has been/will be submitted:
Support (<u>C</u> urrent, <u>P</u> ending, <u>S</u> ubmission Planned in Future or <u>T</u> ransfer of Support): C	
Project/Proposal Title and grant number, if appropriate: Light-Material Interactions in Energy Conversion (award number: DE-SC001293)	
Source of Support: DOE	Location of Project: Caltech
Annual Award Amount: \$4,000,000	Total Award Period: 8/1/14-7/31/18
Annual Award Amount to PI's Research: \$ 320,555	
Describe Research Including Synergies and Delineate with Respect to the EFRC Award: This is the EFRC project	
Person-Months Per Year Committed to Project: 2.4 Pers. Months; Specify: <u>Cal.</u> , <u>Acad.</u> , or <u>Sumr</u> : C	

Investigator: Atwater, Harry A	Other Agencies to which this proposal has been/will be submitted:
Support (<u>C</u> urrent, <u>P</u> ending, <u>S</u> ubmission Planned in Future or <u>T</u> ransfer of Support): C	
Project/Proposal Title and grant number, if appropriate: Electrochemical Potential Control of Mesophotonic Structures (award # DE-FG02-07ER46405)	
Source of Support: DOE	Location of Project: California Institute of Technology
Annual Award Amount: \$ 250,000	Total Award Period: 9/1/13-8/31/16
Annual Award Amount to PI's Research: \$250,000	
Describe Research Including Synergies and Delineate with Respect to the EFRC Award: This DOE BES single investigator grant focuses on fundamental phenomena in tunable plasmonic materials and metamaterials and does not relate to solar energy conversion, which is distinct from the EFRC focus on photonic structures for solar energy conversion.	
Person-Months Per Year Committed to Project: 0.54 Pers. Months; Specify: <u>Cal.</u> , <u>Acad.</u> , or <u>Sumr</u> : C	

Investigator: Atwater, Harry A. (PI: Coval)	Other Agencies to which this proposal has been/will be submitted:
Support (<u>C</u> urrent, <u>P</u> ending, <u>S</u> ubmission Planned in Future or <u>T</u> ransfer of Support): C	
Project/Proposal Title and grant number, if appropriate: Joint Center for Artificial Photosynthesis (JCAP) – award # DE-SC0004993)	
Source of Support: DOE	Location of Project: Caltech
Annual Award Amount: \$ 24,237,000	Total Award Period: 10/1/10-9/30/15
Annual Award Amount to PI's Research: \$296,006	
Describe Research Including Synergies and Delineate with Respect to the EFRC Award: This is the DOE Solar Fuel Hub, which is focused on science advances in artificial photosynthesis and development of prototype solar fuels devices. While JCAP has a distinct focus on solar fuels and the LMI-EFRC has a distinct focus on the theory, design and fabrication of complex photonic materials for photovoltaics, the LMI-EFRC research on light trapping has informed the thinking of JCAP designs for achieving full light absorption in JCAP's proposed Z-scheme solar fuels device.	
Person-Months Per Year Committed to Project: 0.96 Pers. Months; Specify: <u>Cal.</u> , <u>Acad.</u> , or <u>Sumr</u> : C	

Investigator: Atwater, Harry A. (PI: Honsberg)	Other Agencies to which this proposal has been/will be submitted:
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Support (<u>C</u> urrent, <u>P</u> ending, <u>S</u> ubmission Planned in Future or <u>T</u> ransfer of Support): C	
Project/Proposal Title and grant number, if appropriate: QESST: "ERC for Quantum Energy and Sustainable Solar Technologies (NSF ERC, subaward # 12-729)	
Source of Support: NSF/DOE	Location of Project: Caltech
Annual Award Amount: \$ 300,000	Total Award Period: 8/15/11-8/14/16
Annual Award Amount to PI's Research: \$300,000	
Describe Research Including Synergies and Delineate with Respect to the EFRC Award: Atwater's work in this NSF Center is focused on the materials growth and device fabrication of tandem a-Si/c-Si microwire solar cells. EFRC research on light trapping in microwire arrays has benefited (and in fact gave impetus to) this research project.	
Person-Months Per Year Committed to Project: 0.6 Pers. Months; Specify: <u>Cal.</u> , <u>Acad.</u> , or <u>Sumr</u> : C	

Investigator: Atwater, Harry A. (PI: Mirkin)	Other Agencies to which this proposal has been/will be submitted:
Support (<u>C</u> urrent, <u>P</u> ending, <u>S</u> ubmission Planned in Future or <u>T</u> ransfer of Support): C	
Project/Proposal Title and grant number, if appropriate: BioProgrammable One-, Two-, and Three-Dimensional Materials (subaward #PROJ0003600)	
Source of Support: Northwestern University	Location of Project: Caltech
Annual Award Amount: \$ 136,667	Total Award Period: 9/15/11 – 9/14/16
Annual Award Amount to PI's Research: \$136,667	
Describe Research Including Synergies and Delineate with Respect to the EFRC Award: This project is focused on generation of tunable plasmonic 'hot-spots' for biosensing and understanding of fundamental energy and electron transfer processes in nanoscale metallic gaps, and does not overlap the EFRC.	
Person-Months Per Year Committed to Project: 0.36 Pers. Months; Specify: <u>Cal.</u> , <u>Acad.</u> , or <u>Sumr</u> : C	

Investigator: Atwater, Harry A.	Other Agencies to which this proposal has been/will be submitted:
Support (<u>C</u> urrent, <u>P</u> ending, <u>S</u> ubmission Planned in Future or <u>T</u> ransfer of Support): C	
Project/Proposal Title and grant number, if appropriate: First Look West (FLoW)	
Source of Support: DOE	Location of Project: Caltech
Annual Award Amount: \$ 120,000	Total Award Period: 10/1/11 – 9/30/14
Annual Award Amount to PI's Research: \$0	
Describe Research Including Synergies and Delineate with Respect to the EFRC Award: No overlap, this is a DOE grant for a clean technology campus business plan competition.	
Person-Months Per Year Committed to Project: 0.12 Pers. Months; Specify: <u>Cal.</u> , <u>Acad.</u> , or <u>Sumr</u> : C	

Investigator: Atwater, Harry A. (PI: Zia)	Other Agencies to which this proposal has been/will be submitted:
Support (<u>C</u> urrent, <u>P</u> ending, <u>S</u> ubmission Planned in Future or <u>T</u> ransfer of Support): C	
Project/Proposal Title and grant number, if appropriate:	

Quantum Metaphotonics and Metamaterials: from Single Emitters to Strongly Correlated Systems (subaward # 00000553)	
Source of Support: AFOSR	Location of Project: Caltech
Annual Award Amount: \$ 142,500	Total Award Period: 9/30/12 – 9/29/17
Annual Award Amount to PI's Research: \$142,500	
Describe Research Including Synergies and Delineate with Respect to the EFRC Award:	
This project will explore plasmonic materials in quantum communications applications; there is no overlap with the LMI-EFRC.	
Person-Months Per Year Committed to Project: 0.36 Pers. Months; Specify: <u>Cal.</u> , <u>Acad.</u> , or <u>Sumr</u> : C	

Investigator: Atwater, Harry A.	Other Agencies to which this proposal has been/will be submitted:
Support (<u>C</u> urrent, <u>P</u> ending, <u>S</u> ubmission Planned in Future or <u>T</u> ransfer of Support): C	
Project/Proposal Title and grant number, if appropriate: Optics for Full Spectrum, Ultrahigh Efficiency Solar Conversion (award #DE-AR0000333)	
Source of Support: DOE (ARPA E)	Location of Project: Caltech
Annual Award Amount: \$ 800,000	Total Award Period: 3/28/13 – 3/27/16
Annual Award Amount to PI's Research: \$480,000	
Describe Research Including Synergies and Delineate with Respect to the EFRC Award:	
This is an applied project focused on developing a working photovoltaic module utilizing spectrum splitting optics and multijunction solar cells. This award is very focused on prototyping a particular design well-suited to experimental realization, and while it might benefit in the future from LMI-EFRC advances in photonic materials design, the ARPA-E project currently utilizes established spectrum-splitting optics design in its prototyping effort. Unlike the ARPA-E project, the LMI-EFRC is a fundamental scientific research project that does not have a mission to develop solar cells.	
Person-Months Per Year Committed to Project: 1 Pers. Months; Specify: <u>Cal.</u> , <u>Acad.</u> , or <u>Sumr</u> : C	

Investigator: Atwater, Harry A. (PI: Bowden)	Other Agencies to which this proposal has been/will be submitted:
Support (<u>C</u> urrent, <u>P</u> ending, <u>S</u> ubmission Planned in Future or <u>T</u> ransfer of Support): C	
Project/Proposal Title and grant number, if appropriate: Thin Silicon Solar Cells: A Path to 35% Shockley-Queisser Limits Source of Support: (Arizona State University (subaward # 14-377))	
Source of Support: DOE	Location of Project: Caltech
Annual Award Amount: \$ 220,000	Total Award Period: 9/30/13 – 9/29/14
Annual Award Amount to PI's Research: \$220,000	
Describe Research Including Synergies and Delineate with Respect to the EFRC Award:	
No overlap. This project is focused on synthesis of heterojunction for high efficiency solar cells.	
Person-Months Per Year Committed to Project: 0.6 Pers. Months; Specify: <u>Cal.</u> , <u>Acad.</u> , or <u>Sumr</u> : C	

Investigator: Atwater, Harry A.	Other Agencies to which this proposal has been/will be submitted:
Support (<u>C</u> urrent, <u>P</u> ending, <u>S</u> ubmission Planned in Future or <u>T</u> ransfer of Support): P	
Project/Proposal Title and grant number, if appropriate: Full Spectrum Ultrahigh Efficiency Solar Energy Conversion (ARPA-E add on funding request – award #DE-AR0000333)	
Source of Support: DOE (ARPA E add on funding request)	Location of Project: Caltech

Annual Award Amount: \$ 122,228	Total Award Period: 10/1/13 – 12/31/14
Annual Award Amount to PI's Research: \$122,228	
Describe Research Including Synergies and Delineate with Respect to the EFRC Award:	
No overlap. This project focuses on device models for light trapping solar cells.	
Person-Months Per Year Committed to Project: 0* Pers. Months; Specify: <u>Cal.</u> , <u>Acad.</u> , or <u>Sumr</u> : C *effort proposed on main award	