U.S. House of Representatives
Judiciary Committee

Subcommittee on Immigration, Citizenship, Refugees,
Border Security and International Law

Hearing on the Need for
Green Cards for Highly Skilled Workers

Written Testimony Submitted
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And

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Good morning. My name is Eddie Sweeney and I am the Senior Vice President, Worldwide Human Resources at National Semiconductor Corporation and the chair of the Semiconductor Industry Association's Semiconductor Workforce Strategy Committee. I am pleased to testify today on behalf of the SIA.

The Semiconductor Industry Association (SIA) has represented America's semiconductor industry since 1977. The U.S. semiconductor industry has 46 percent of the $257 billion world semiconductor market. The semiconductor industry employs 216,000 people across the U.S., and is America's second largest export sector.

Executive Summary

- **The semiconductor industry strongly supports H.R. 5882, H.R. 5921, and H.R. 6039 and urges prompt passage this year.**

- **High-skilled immigration reform is part of SIA's three pillars of innovation that are necessary for the U.S. to compete in the global economy. The three pillars are 1) support for basic research, 2) a talented workforce, and 3) pro-innovation tax policies**

- **While relatively small in number, foreign nationals play a critical role in maintaining U.S. leadership in semiconductors. Foreign nationals comprise half of the masters and 71 percent of the PhDs gradating from U.S. universities in electrical engineering, and they help create the successful products that support other jobs throughout the company.**

- **Skilled foreign nationals should be a permanent part of the workforce but are prevented from doing so by caps on green cards that have not been changed since 1990.**

- **SIA companies seek permanent resident status for 97% of their H-1B hires. The industry is currently seeking permanent residency for about 3,800 employees--20% of those employees were hired four or more years ago.**

- **While waiting, these employees face limitations on their ability to move or be promoted without restarting the green card process, and international travel can be problematic. The employees' spouses are often not able to work due to the temporary status.**

- **Foreign nationals are frustrated by the long waits putting their lives in limbo and seek alternatives – either with another employer or with the same employer's offshore operations.**

- **Many U.S. companies are finding "work around" solutions that often involve R&D sites overseas, and as a result downstream benefits are not flowing to the U.S. economy.**

- **Last October the SIA found common ground on green card issues with the Institute of Electrical and Electronics Engineers – United States of America (IEEE-USA), an organization whose differences with high tech associations on H-1B issues were well known.**

- **The common positions with IEEE-USA centered around permanent resident issues including raising the employment-based immigrant visa cap with an exemption for foreign professionals with advanced degrees in STEM fields from U.S. universities and creating a new foreign student visa category to**

allow U.S. STEM bachelor's or higher degree holders who have a job offer to transition directly from student visas to green cards.

- **In May the SIA and the IEEE-USA followed up its letter on long term reforms with specific support for H.R. 5882, H.R. 5921 and H.R. 6039:**

  - **By exempting Science, Technology, Engineering and Mathematics (STEM) graduates from the current employment-based admissions quotas, H.R. 6039, will ensure that this talent is retained to benefit the U.S. for the long term.**

  - **H.R. 5921 will put an end to the interminable delays for skilled foreign professionals from certain countries by eliminating unduly restrictive per country limits on employment-based immigration.**

  - **H.R. 5882 will help to reduce visa backlogs and processing delays in immigrant admissions by "recapturing" unused employment-based visas from prior years for immediate use.**

SIA supports high-skilled immigration reform within the context of the three pillars of innovation.

Let me state at the outset that the semiconductor industry strongly supports H.R. 5882, H.R. 5921, and H.R. 6039 and urges prompt passage this year. These bills will exempt foreign nationals who graduate with masters and PhDs and have a job offer in the U.S. from the current employment-based admissions quotas, eliminate unduly restrictive per country limits on employment-based immigration, and recapture unused employment-based visas from prior years and making them available for immediate use.

Before discussing the importance of these three bills, I should note that **the industry's support for high-skilled immigration reform is part of our complete set of recommendations to promote innovation in the U.S.** We have described our innovation agenda as the "three pillars", including increasing Federal support for basic research in the physical sciences; improving talent in the U.S. by reforming our immigration laws and improving K-12, undergraduate and graduate STEM education; and enacting pro-innovation tax policies by making permanent and enhancing the R&D credit.

A major element of the three pillars is improving STEM education. SIA supports maintaining standards and accountability in No Child Left Behind, and appropriations needed to ensure that our nation's children improve in science and mathematics. While support for education is primarily a government responsibility, the semiconductor industry has stepped up and invested heavily in this area as well. The SIA's most recent K-12 catalog, available on request, found that in the past 3 years:

- **the combined spending by member companies on K-12 programs is over $275 Million,**
- more than 310,000 teachers have been trained or received support through member sponsored programs, and
- over 14.5 Million students have been reached by the programs these companies support.

The need for a U.S. innovation agenda is becoming more evident every day. Better, faster, and cheaper chips are driving increased productivity and create jobs throughout the economy. For over three decades the industry has followed Moore's Law, under which the industry has doubled the number of circuits on a single chip so that today the cost of making one million circuits is one penny.

Given the ubiquity of semiconductor devices, and its central position in the U.S. economy, it is critical that the U.S. continues to lead in this technology. Yet, increasingly other nations are challenging along various points in the value chain. For example, in 2002 31 percent of new semiconductor manufacturing equipment was sold in the U.S., an indication that the U.S. was maintaining a reasonable share of leading edge semiconductor manufacturing capacity. Today, a mere five years later, only 16 percent is sold in the U.S.

We are approaching a critical crossroad. The semiconductor technology advances that have enabled the information age are projected to end around 2020 as we reach the physical and other limits of our ability to pack more circuits on each semiconductor chip using current technology. At that point, revolutionary new nanotechnologies will be needed. The basic research discoveries on which these new technologies depend must be made today if the technologies will be available for commercialization about a decade from now. Simply put, as we approach the fundamental limits of the current technology which has driven the high tech industry, the country whose companies are first to market in the subsequent technology transition will likely lead the coming nanoelectronics era the way the U.S. has led for half a century in microelectronics. Immigration reform plays a critical role in ensuring that America earns this leadership position.

With this broader context in mind, I would now like to move to the specifics of the immigration issue, focusing on three specific topics:

- The critical role that immigrants play in maintaining U.S. leadership and how U.S. immigration policy is undermining our ability to compete;

- SIA's work with the IEEE-USA to develop a consensus position on green card reform, and

- SIA's support for the H.R. 5882, H.R. 5921, and H.R. 6039.

Immigrants play a critical role in maintaining U.S. leadership, yet U.S. immigration policy undermines our ability to compete

The number of foreign engineers hired by the semiconductor industry is relatively small – about 1,628 new H-1B hires (as opposed to lateral hires) in 2007. The number would, of course, be larger if the H-1B was not subject to a cap, but even in past years when the cap was substantially higher, the industry's H-1B hires were around 3,000.

The relatively small numbers belie the important role that foreign workers play in the success of the semiconductor companies. **Foreign nationals comprise half of the masters and 71 percent of the PhDs gradating from U.S. universities** in the engineering fields needed to design and manufacture the complex circuits that are embodied in silicon chips. They play an important role in performing the research to continue to increase the density of circuits on each chip, finding ways to lower manufacturing costs, developing and launching new products, and providing applications expertise to help customers to design-in new semiconductors in their electronic systems. By lending their particular talents, our foreign employees are creating the jobs in other parts of the company such as administration and production.

Since foreign workers are vital to the success of semiconductor companies, they try to incorporate them as a permanent part of the workforce. SIA's workforce committee survey found that companies are seeking permanent resident status for 97% of their H-B hires. The caps on green cards are thus a major problem for the industry. The industry is currently seeking permanent residency for about 3,800 employees. About 20% of these employees were hired four or more years ago. While waiting, these employees continue to be under the restrictions of the H-1B visas program such as limitations on their ability to move or be promoted and on their spouse's ability to work.

Needless to say, individuals become frustrated and some seek alternatives – either with another employer or with the same employer's offshore operations. One SIA member, LSI Corporation, reported that within the past year it had six employees leave the country based on the fact that they grew tired of the green card process, several of whom went to work for another company.

Another SIA company, Texas Instruments reports that four years ago it hired a design engineer with a masters in electrical engineering from Georgia Tech. He is now the lead designer on some key new products in a growing business segment and his impact on net revenue has been close to $1.75M with projections to go up to $5M in the next few years. He was hired on an H-1B visa while awaiting permanent resident status. Originally from India, he likely faces several more years of wait time.

My company, National Semiconductor, has a Product Quality Management engineer with a masters degree from the University of Texas at Arlington who is an Indian national. He was hired in 2001 and had worked at National Semiconductor's chip fabrication plant in Arlington, Texas for 6 years. His skill and expertise from working at this facility made him an ideal candidate for a position that National had open for over

six months which involved ensuring that new products can be efficiently manufactured at National's factories. A number of American jobs in our product design group and our factories depend on the efforts of this engineer. Since the position involved a promotion and relocation, the person had to start the green card process anew last year and absent passage of green card reform bills will likely face another four years of waiting.

Our problems are not restricted to nationals facing country quota backlogs. National Semiconductor hired a design engineer 5 years ago with a masters degree in electrical engineering from Stanford University. Originally from France, he is a lead designer providing critical high speed analog design knowledge that will allow future cell phone towers to handle more data. These products are providing approximately $2M annual revenue, with a projected cumulative revenue of $15M over the next five years. He was hired on an H-1B visa and soon after a traditional labor certification application was filed on his behalf. However the Labor Department did not respond with recruitment instructions until last year, slowing the process considerably. His application for an Adjustment of Status (I-485) was finally able to be filed last summer, but he is still waiting for an approval.

Many U.S. companies are finding "work around" solutions that often involve R&D sites overseas, meaning that the downstream benefits are not flowing to the U.S. economy. We may be seeing evidence of work-arounds in the semiconductor industry, as the percent of H-1Bs hired compared to total college hires has dropped from 57% in 2005 to 40% in 2007. The decrease is not a result of universities graduating a smaller percent of foreign students. A more likely explanation is that companies are hiring foreign students and placing them at offshore facilities.

Other nations recognize the dilemma facing U.S. companies and their foreign national employees. The European Commission has recently announced its intent to issue "blue cards" which were inspired by our green cards. In announcing the plan to provide a fast and easy path to stay in Europe, the President of the European Commission declared "With the EU Blue Card we send a clear signal: Highly skilled people from all over the world are welcome in the European Union."

SIA work with the IEEE-USA on broader reform

Last summer, following the Senate's determined but ultimately unsuccessful effort to pass a comprehensive immigration package, the SIA concluded that the problems created by our current outdated policies regarding highly skilled immigration were too important to abandon and decided to consider new approaches to the issue. Given the difficult political issues surrounding changes to immigration policy, SIA determined that it is all the more important for parties with different viewpoints to come together and seek common understanding.

With this in mind, the SIA approached the Institute of Electrical and Electronics Engineers – United States of America (IEEE-USA), an organization whose differences with high tech associations on H-1B issues were often highlighted in media stories. Electrical and electronics engineers design the complex circuits that are embodied in silicon chips, and represent about half of the semiconductor industry's engineering workforce, making the IEEE-USA an appropriate organization to engage. **IEEE-USA agreed to work with SIA to define areas of common ground** focused on the ability of highly-talented individuals to get permanent resident status (green cards) in an expedited manner.

In October 2007, SIA and IEEE-USA sent a letter to the House Judiciary Committee majority and minority leadership supporting efforts to attract and retain foreign professionals with advanced degrees in STEM fields as legal permanent residents. The letter specified that SIA and IEEE-USA both "support legislation that will strengthen America's high tech workforce by:

- **Raising the employment-based immigrant visa cap, including an exemption for foreign professionals with advanced degrees in STEM fields from U.S. universities,**

- **Creating a new foreign student visa category** to allow U.S. STEM bachelor's or higher degree holders who have a job offer to transition directly from student visas to green cards,

- **Extending post curricular optional practical training** for foreign students from 12 months to 24 months to allow them to go more easily from temporary to permanent resident status, and

- **Exempting the spouse and children** of certain employment-based professionals from the employment-based immigrant visa cap "

The letter noted that while both SIA and IEEE-USA believed there is value in providing a clear statement of areas of agreement, both organizations continued to have broader immigration positions that include elements in which they were not aligned.

SIA joining IEEE-USA to support HRs 5882, 5921, and 6039

On May 16, 2008, the SIA and the IEEE-USA sent a letter to Subcommittee on Immigration, Citizenship, Refugees, and Border Security Chairman Zoe Lofgren to **urge prompt enactment of three permanent, employment-based immigration reform bills -- H.R. 5882, H.R. 5921 and H.R. 6039.**

The letter noted that both organizations "continue to support the fundamental employment-based reforms that we outlined last fall, but recognize that the modest proposals that [have been] put forward are a realistic starting point."

The letter laid out the advantages of each of the three bills, and noted that the need for reform is compelling and deserving of bipartisan support.

- As noted above, foreign nationals comprise half of the masters and 71 percent of the PhDs in electrical engineering at U.S. universities. These graduates and others earning advanced degrees in Science, Technology, Engineering and Mathematics (STEM) fields at U.S. schools often have to wait six or more years for employment based permanent resident status. By exempting these graduates from the current employment-based admissions quotas H.R. 6039, will ensure that this talent is retained to benefit the United States for the long term.

- Due to limits under current law, applicants for employment-based immigrant admissions from high demand countries, such as India and China, often have to wait seven to ten years or more for their immigrant visa petitions to be adjudicated. H.R. 5921 will put an end to such interminable delays for skilled foreign professionals, including engineers and scientists, by eliminating unduly restrictive per country limits on employment-based immigration.

- H.R. 5882 will help to reduce visa backlogs and processing delays in immigrant admissions by "recapturing" unused employment-based visas from prior years and making them available for immediate use by petitioners who meet all statutory requirements for admission as legal permanent residents.

The letter concluded that "If enacted, these three simple changes will enhance U.S. technological competitiveness and enable highly educated immigrants to contribute to job creation in the U.S."

Summary

The U.S. semiconductor industry has been the world leader since the invention of the transistor in 1948. This leadership is now facing new challenges as other nations gain along various points in the value chain such as leading edge manufacturing capacity and as we approach the physical and other limits of our ability to pack more circuits on each semiconductor chip using current technology and must transition to a replacement technology.

If the U.S. is to continue to lead in semiconductors, it must embrace the three pillars of innovation by supporting basic research, ensuring a talented workforce, and enacting pro-innovation tax policies. To ensure a talented workforce, the U.S. must invest in science, technology, engineering and mathematics (STEM) education and it must permit foreign nationals to work in the U.S. rather than force them to work overseas, often for our competitors. Foreign nationals comprise half of the masters and 70 percent of the PhDs gradating from U.S. universities in electrical engineering, and they help create the successful products that support other jobs throughout the company.

The long waits created by the cap on permanent resident visas is creating frustrations among our foreign national employees and they are seeking alternatives with other employers or with their current employer's offshore operations. Many U.S. companies are finding "work around" solutions that often involve R&D sites overseas, meaning that the downstream benefits are not flowing to the U.S. economy.

The SIA has sought common ground with others outside of the industry, resulting in a set of long term recommendations on immigration issues and specific support for H.R. 5882, H.R. 5921 and H.R. 6039 with the IEEE-USA. We urge the Congress to also seek common ground and pass these modest proposals on a bipartisan basis as a first step towards passage of long term reforms at a later date.