Iran students gear up solar car for US challenge

May 8 2014, by Nasser Karimi

In this April 30, 2014 photo, Qazvin Azad University students assemble the Havin-2, or Brilliant Sun, for a test drive in Qazvin, Iran. A group of Iranian students and their teachers geared up for a summer road trip through the American heartland, fueled only by the sun and their hopes to shine in what will be a first for the Islamic Republic. The flat, rectangular Havin-2, drove for tests alongside slightly larger gas-powered motor vehicles outside the capital, Tehran, ahead of the eight-day, 1,700-mile (2,700-kilometer) race that will take it from Austin, Texas, to Minneapolis. (AP Photo/Vahid Salemi)

Clouds may still linger over relations between Washington and Tehran, but that's not stopping a group of Iranian students and their teachers from gearing up for a summer road trip through the American heartland.

Fueled by the sun and their hopes to shine in a first for the Islamic Republic, the 19-strong team is preparing to bring an Iranian solar car to compete in the United States for the first time, in the American Solar Challenge in July.

The flat, rectangular Havin-2, or Brilliant Sun, drove for tests alongside slightly larger gas-powered motor vehicles last week on a stretch of highway in Iran's mountainous north, ahead of the eight-day, 1,700-mile (2,700-kilometer) race that will take it from Austin, Texas to Minneapolis, Minnesota.

While the engine and photovoltaic panels are imported, the team designed and developed a Maximum Power Point Tracking (MPPT) system for the car, which interconnects inverters, battery chargers and other devices to optimize its photovoltaic cells.

Farkhondeh Naziri, 20, in charge of electronics on the project and the only female member of the team from Qazvin Azad University, said they plan to optimize the car's absorption of solar energy based on the route it plans to take.

"We first do a simulation of the actual race course and study the weather conditions there. Then we try to calculate what the sun's angles would be during the eight-days," she said.

In this April 30, 2014 photo, a Qazvin Azad University student test drives the rectangular Havin-2, or Brilliant Sun, in Qazvin, Iran. The 220-kilogram (485-pound) vehicle is 4.5 meters (15 feet) long, 1.8 meters (6 feet) wide and 1.1 meters (4 feet) tall, with a cockpit-like bubble for the driver. With photovoltaic cells covering some 6 square meters (65 square feet) of its surface, the car's lithium-Ion batteries can drive it up to four hours between 90 to 150 kph (56 to 93 mph). (AP Photo/Vahid Salemi)

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In this April 30, 2014 photo, Qazvin Azad University students prepare the Havin-2, or Brilliant Sun, for a test drive in Qazvin, Iran. The group of Iranian students and their teachers are gearing up for a summer road trip through the American heartland, fueled only by the sun and their hopes to shine in what will be a first for the Islamic Republic. (AP Photo/Vahid Salemi)

The car's predecessor, the Havin-1, ranked 17th in the 2011 World Solar Challenge in Australia.

The team is sponsored by an Iranian bank and a car battery producer, which paid some $150,000 to build the car. Attendance in the event, including travel, is expected to cost the same amount.

In this April 30, 2014 photo, a Qazvin Azad University student assembles the rectangular Havin-2, or Brilliant Sun, in Qazvin, Iran. The flat, rectangular Havin-2, drove for tests alongside slightly larger gas-powered motor vehicles outside the capital, Tehran, ahead of the eight-day, 1,700-mile (2,700-kilometer) race that will take it from Austin, Texas to Minneapolis. (AP Photo/Vahid Salemi)

Professor Beitollah Akbari, who manages the Havin-2 team, said he believes the project could help advance the cause of clean energy in a country where generous state subsidies have encouraged massive use of motor vehicles.

"Our young scholars and university students can significantly contribute to Iran's economic growth, particularly in the field of clean energies that can help us reduce dependency on oil. Especially now that our country is in dire need of cutting off reliance on energies derived from oil by all means."

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Last month, Tehran cut a portion of its energy and fuel subsidies in order to bring prices closer to international levels, nearly doubling some prices at the pump and testing public support for such measures in a country battered by inflation and economic sanctions imposed over its contested nuclear program.

Subsidies have kept the cost of gasoline artificially low, and were blamed for making petrol cheaper than bottled mineral water. The cuts aim to release government money for production and infrastructural projects in order to improve efficiency and bolster the economy.

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Transportation expert Masoud Mohajer said solar energy could potentially be a good investment for the government, given that the country has more than 300 sunny days a year to power the cells.

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"As Iran cuts energy and fuel subsidies, solar energy, which is available almost all across the country, will be able a good alternative," he said.