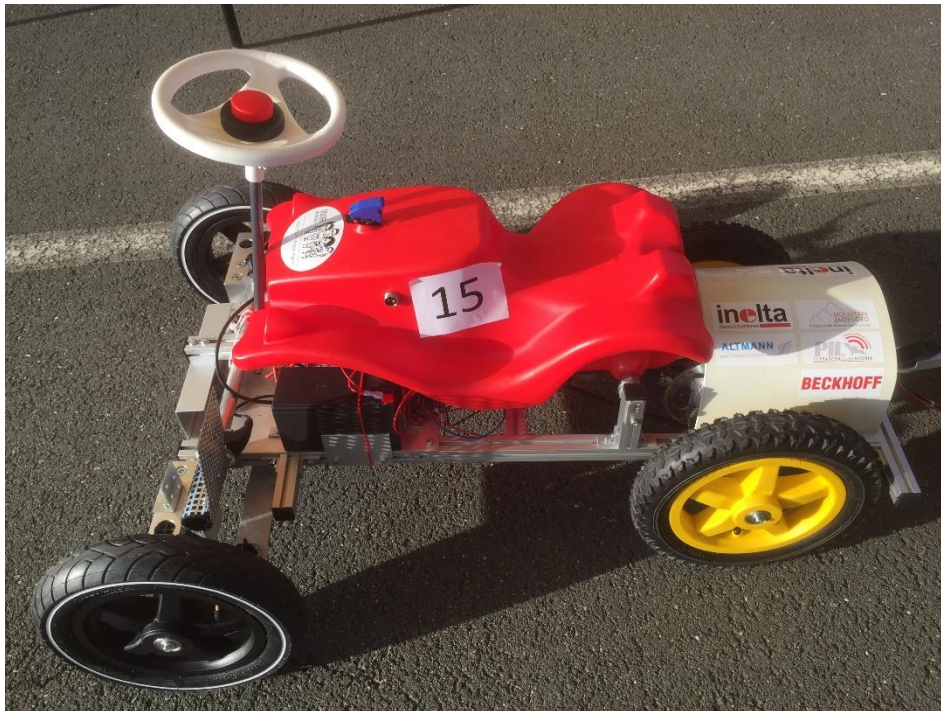


## Put the sun in the toy tank: 11th Bobby Car Solar Cup:

*On 18 September in Bielefeld, the future of the well-known red cult mobile could be marvelled at. At the 11th Bobby Car Solar Cup, a total of 25 student teams from schools in the region of Ostwestfalen-Lippe entered the race with modified solar-powered Bobby Cars. The "Lippe Racer" team, whose main sponsors include Inelta and PiL, also took part in the race.*



**Picture 1:** The modified solar racer: The only condition for the design teams was the preservation of the characteristic body with original steering wheel and horn.

### Starting conditions

The red body and steering wheel are still the same, but "under the hood" the Bobby-Car-based solar racers don't have much to do with the cult toy cars for very young drivers. The teams had six months to convert the red mini cars from leg power to solar power. The only condition: The Bobby Car body with steering wheel and horn had to be preserved and the required solar module had to be carried on a trailer. However, the replacement of the wheels, wheel spacers and the use of gearshift technology, capacitors for improved sprintability and optimised transmission ratios between the drive and traction wheels were

permitted or expressly desired. And since the eye is also involved, the teams of ninth and tenth graders had free rein in the design of vehicle fairings and colour schemes.

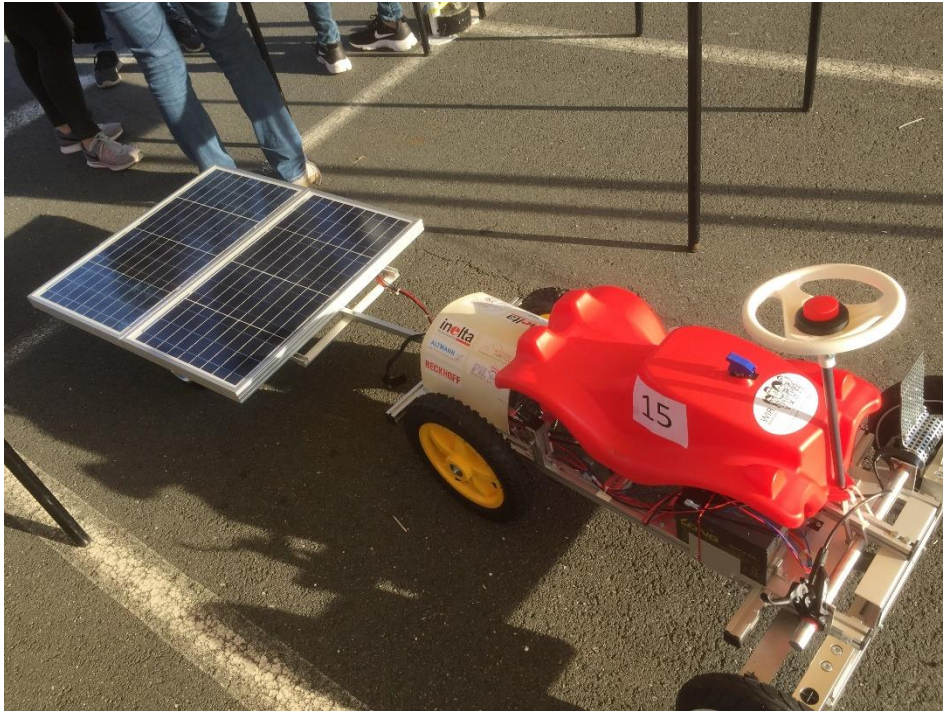


**Picture 2:** The Lippe Racer Team

### **Sponsor search**

To finance the entry fee, the teams had to find a sponsor from the business world. The money will be used by the authors and organizers of the Bobby Car Solar Cup, the VDI OWL and the Energie Impuls OWL e.V. to cover the costs for a new red Bobby Car, a set of new, rule-compliant rechargeable batteries or a complete kit including motors, regulators and solar modules. In recent years, the participants have built over 100 Solar Bobby Cars, which were made available as a basis for further developments. The search for a sponsor who can also support the team in technical matters is an essential aspect of the race. It is intended to encourage schoolchildren to gain important ideas for their future career choices through direct contact with companies. In this way, the "Lippe Racer" team of the Gymnasium Schloss Neuhaus, which participated in the competition for the first time, PIL and Inelta as main sponsors.





**Picture 3:** Never empty tank again: Unlimited energy over the trailer energy over the trailer



**Picture 4:** Rescue at the last second: Ava Meyer-Rahe agreed to take the wheel for the retired pilot Joshua.

### The race

In the race, the pilots, who had to weigh at least 20 kilos and were not allowed to be more than 9 years old, had to prove their own performance as well as that of the tuned Bobby Cars in a dexterity course. The 9-year-old Joshua Thottungal competed for the "Lippe Racer" team. Unfortunately, the young pilot withdrew his

report at the request of his parents after a minor accident at the test track. Among the spectators, however, a substitute pilot was quickly recruited: Ava Meyer-Rahe accepted the challenge and took the place behind the wheel. However, as Ava hadn't had the opportunity to familiarise herself with the course before, she made a small driving mistake at the beginning. As a result, the team was given a 15-second time penalty, which Ava was unable to drive back in in spite of her full efforts in the subsequent time race. But the Lippe Racer took it sporty, because after all the participation in the race with the functioning self-construction is to be evaluated as a complete success. Here the motto was: "To be there is everything. Inelta and PIL congratulate the team on their achievements!



**Picture 5:** Drive with obstacles. The pilots had to prove their high skill.

### **Team experiences**

How do the team members rate the Bobby Car Solar Cup? "It was the first project of its kind for me," says Jonas Brand. (16) from the Lippe Racers. "I learned which different components are necessary to drive a vehicle as efficiently as possible using renewable energies, as in this case the Bobby Car. Jonas Menne (16) also explains his new experiences: "We have already drilled, filed, worked with cast resin and aluminium profiles. We were also shown how a lathe works." And Levin Bönninghoff (16) initially focused on the constructive approach: "I learned how to work even better with CAD software and how the developed parts are produced afterwards. And how did the cooperation go? For the students, it was not always easy to coordinate the team meetings for time reasons, like Yasmin Çolak. (15)



reports: "Unfortunately, the team rarely saw each other, making it difficult to keep everyone on the same footing. But we were also able to solve this problem through communication, e.g. via Whatsapp". Jonas Brand confirms this: "The biggest problem was to find appointments next to the school where most of the team members had time to continue working on the Bobby Car. Otherwise, the work in the team went pretty well and we helped each other a lot."



**Bild 6:** Boxenstopp

### **Career wishes**

Since one of the declared aims of the organisers of the Bobby Car Solar Cup is to provide young participants with groundbreaking insights into the world of work, the final question is whether the preparations for the Cup had an influence on the Lippe Racer. Their interests are many and varied, and none of the interviewees from the team wants to make a final decision yet. "I want to do something in the direction of mechanical engineering, industrial engineering or electrical engineering," explains Levin. "You always have to be open to everything, but I would have to learn more, for example through internships. Yasmin can imagine working in the field of sensors: "In my opinion, the diversity of sensors is greatly

underestimated. I would like to work in the lab because I love trying out and developing new things." While Jonas Brand is certain that he wants to work as a software developer after school, Jonas Menne wants to do something with physics, preferably in the field of particle and quantum physics. "Through the project I mainly got to know apprenticeships, but I am aiming for a degree or a dual study.



**Picture 7:** Head-to-head in the time race

PiL and Inelta thank all members of the Lippe Racer team for their great commitment and keep their fingers crossed for the future.

Characters:	6.343
Date:	25.09.2018

### Company background

The Sensor Group consists of inelta Sensorsysteme GmbH & Co.KG based in Taufkirchen near Munich, PIL Sensoren GmbH from Erlensee near Frankfurt/Main and VYPRO s.r.o., a production site in the Slovakian town of Trenčín. inelta Sensorsysteme has been developing, manufacturing and selling sensors in Ottobrunn for over two decades and has a development department for ultrasonic sensors there. PIL, a pioneer in ultrasonic sensor technology, has almost three decades of experience in design and manufacturing in Erlensee. VYPRO contributes more than a decade of experience in the field of sensor processing, cable assembly and connectors. The product range of the group includes sensors for displacement and length measurement, force sensors, sensor signal amplifiers, pressure switches, capacitive sensors and ultrasonic sensors, as well as services in the field of cable assembly. At inelta and PIL, industry- and customer-specific sensor solutions form a special focus, which is continuously expanded with interdisciplinary know-how.

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