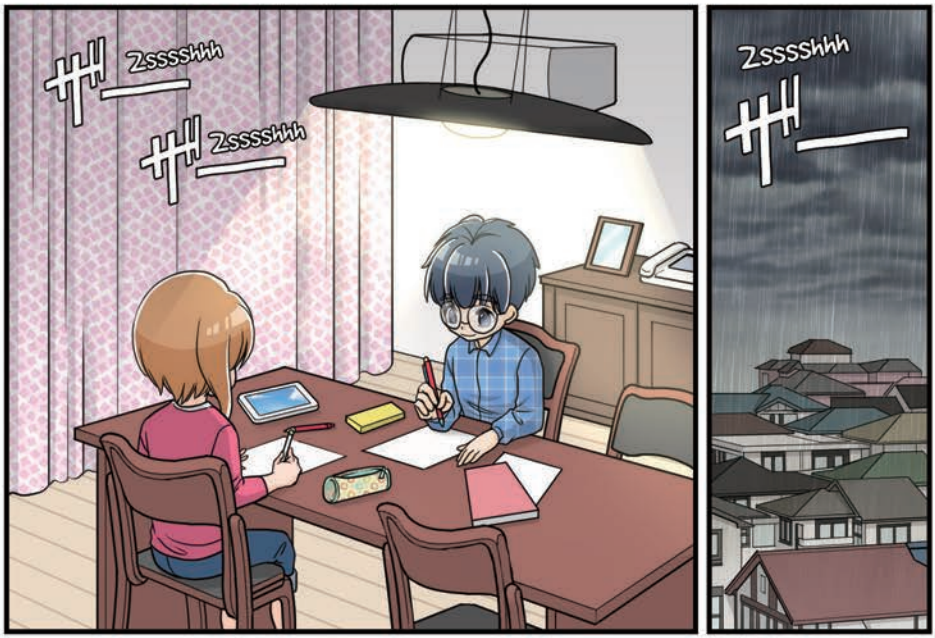
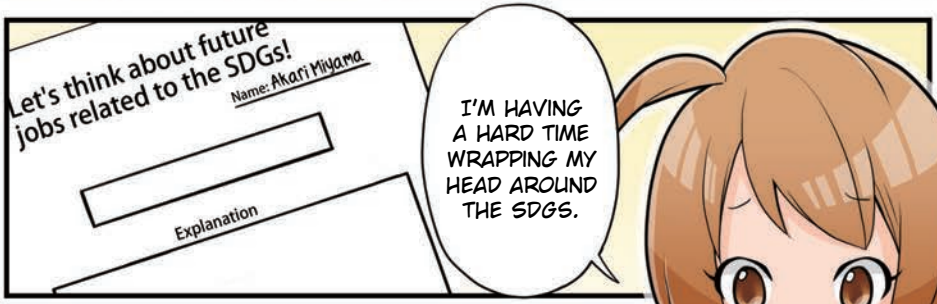
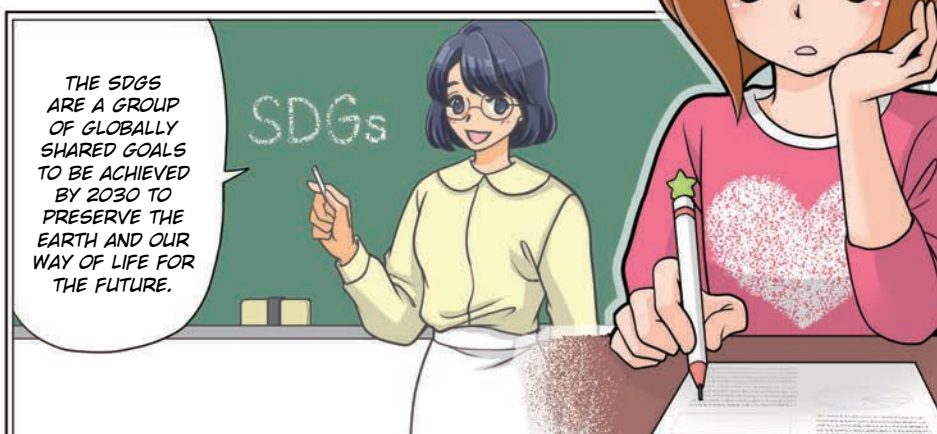
CHAPTER 1 NO ENERGY? BIG PROBLEM!







THE PROTOTYPE FOR HYDROGEN FUEL CELLS WAS INVENTED IN 1839.

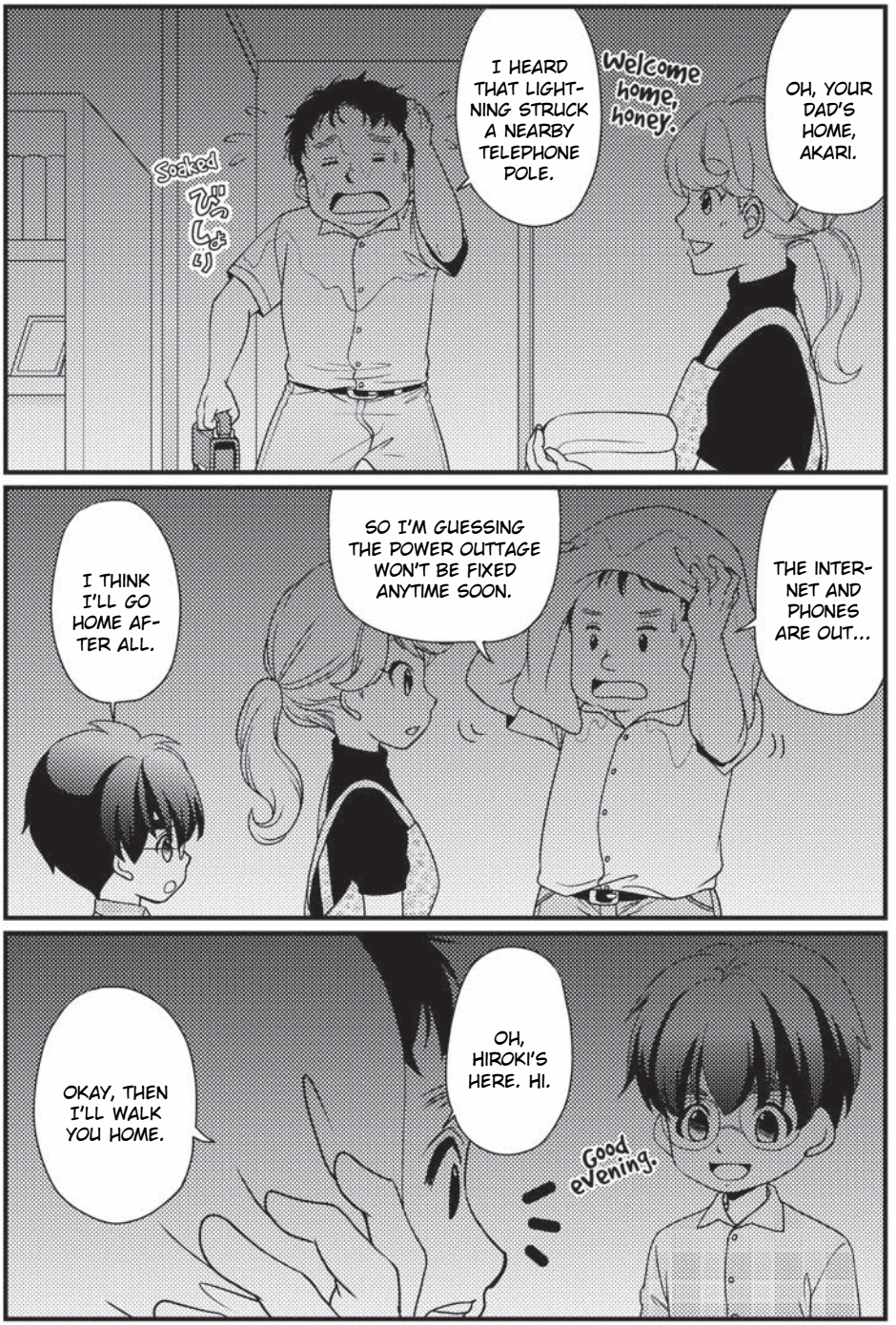
ROCKETS AND SPACESHIPS HAVE USED HYDROGEN FOR FUEL SINCE THE 1960S.

TRIVIA

WHEN PREPARING TO LAUNCH A ROCKET, LARGE SECTIONS ARE FILLED WITH LIQUID HYDROGEN, WHICH IS FUEL, AND LIQUID OXYGEN, TO BURN THE FUEL.

TRIVIA

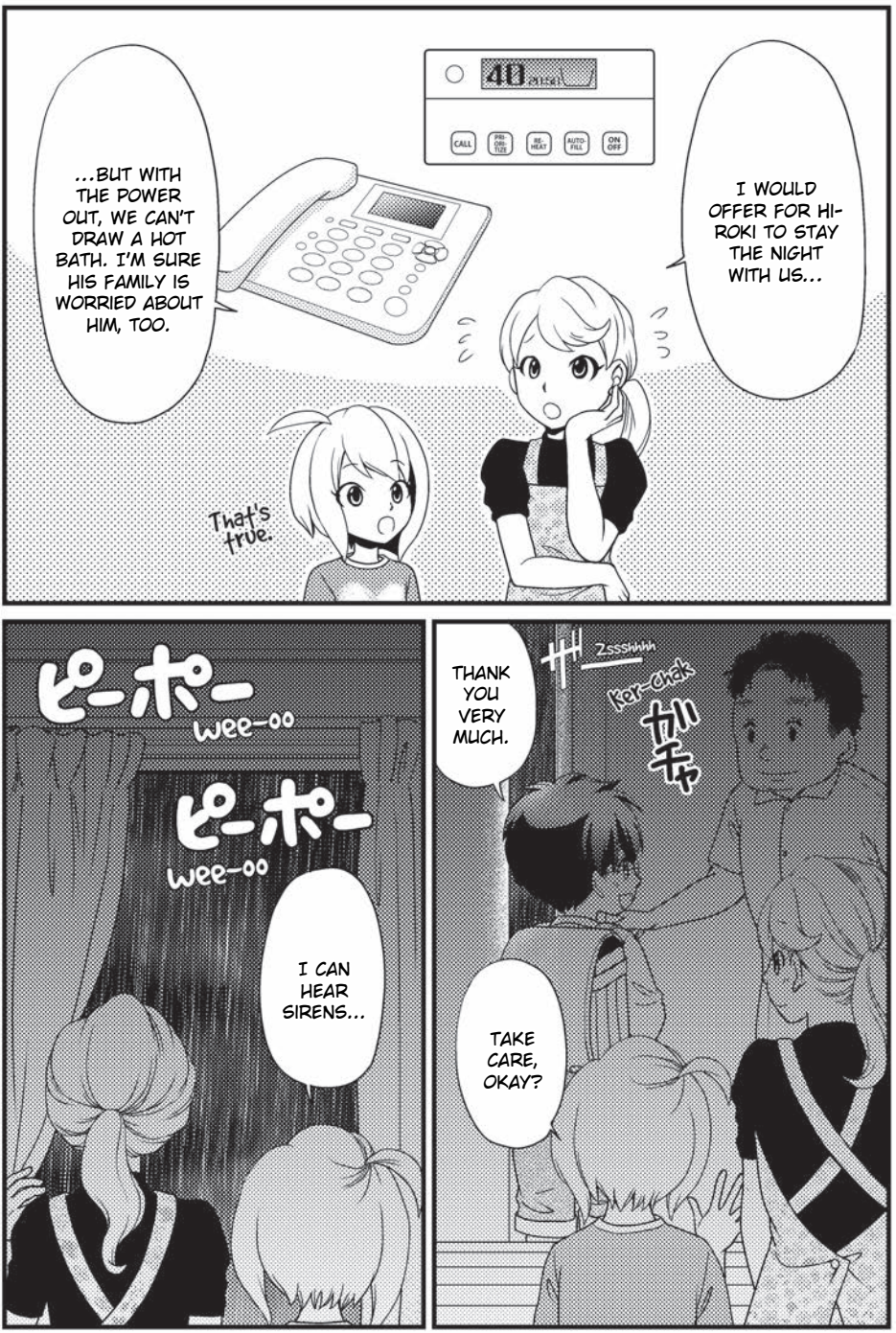
CURRENTLY, HYDROGEN IS USED IN FERTILIZER MANUFACTURING, SEMICONDUCTOR CAN ELECTRONIC COMPONENT PROCESSING, THE PETROCHEMICAL INDUSTRY, FOOD MANUFACTURING, AND MORE.



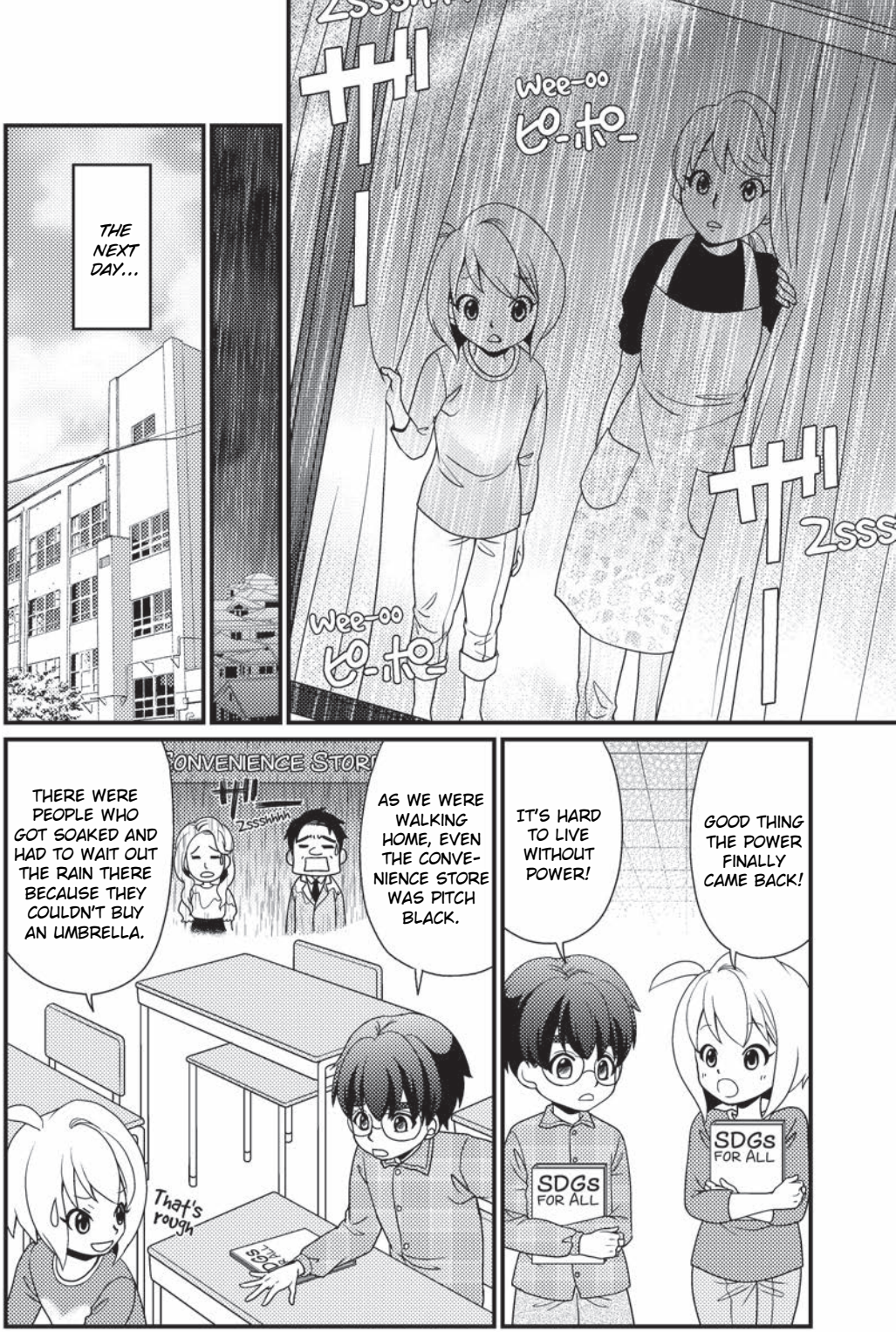
TRIVIA

JAPAN HAS SET A GOAL TO REDUCE GREENHOUSE GAS EMISSIONS BY AT LEAST 54% OF THEIR 2013 LEVELS BY THE YEAR 2030.

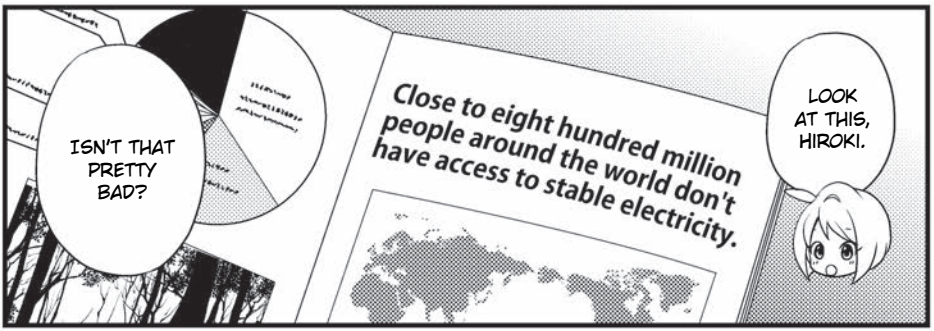
IN JAPAN, THE 3R INITIATIVE (REDUCE, REUSE, AND RECYCLE) IS BEING PROMOTED.



THE PROMOTION OF THE 3R INITIATIVE WAS PRESENTED BY JAPAN AT THE G8 SEA ISLAND SUMMIT IN JUNE OF 2004, AND WAS THEN IMPLEMENTED BY OTHER COUNTRIES.



IN 2021, THE GLOBAL POPULATION REACHED APPROXIMATELY 7,875,000,000 PEOPLE.



TRIVIA

UNLIKE ELECTRICAL ENERGY, IT IS DIFFICULT TO TRANSFORM SOUND AND NUCLEAR ENERGY INTO VARIOUS OTHER FORMS OF ENERGY.

WHAT'S ENERGY? PART 2

MICROPHONES TRANSFORM SOUND ENERGY INTO ELECTRICAL ENERGY. LIGHTS CHANGE ELECTRICAL ENERGY INTO LIGHT ENERGY. THESE ARE EXAMPLES OF HOW ENERGY CAN CHANGE FORMS. THIS IS ESPECIALLY IMPORTANT FOR "ELECTRICAL ENERGY" WHICH IS A CONVENIENT, EASILY CHANGED FORM OF ENERGY.