March 2023

High Energy Accelerator Research Organization

Environment・Global Warming・Energy Conservation Committee

Action plan for global warming countermeasure and energy saving 2023

Item	Action plan
1. Reduction greenhouse gas emissions (CO_2)	◇ **The target value of greenhouse gas emissions (CO_2) of FY 2023 is : At most 257,522(t)** ○ We set the target value of the reduction "-2,739(t)" in every fiscal year from 2018. (CO_2 emission of FY 2005 "273,960(t)" is used as the baseline, 2,739(t)/FY is 1% of this amount) ○ KEK will try to make efforts below to achieve the goal.
2. Pay consideration when to construct or when to maintain the buildings	**1. Saving water** ・Install apparatus at the end of water supply system to save water. (e.g.) a sensing flushing valves, automatic faucet. **2. Conserve the environment of KEK campus.** ・Pruned branches/leaves, fallen leaves etc are reused as much as possible to reduce the waste. **3. Others** KEK will check if the contractors doing below ・Use energy-efficient machines as possible. ・Treat construction waste properly. **4. Visualize our action** Make the report to announce our concrete action.
3. Pay consideration when to purchase the goods when to use them	**1. Consider purchasing low pollution car.** **2. Pay attention when using cars.** ・Carry out car maintenance regularly. (e.g.) check the tire pressure. ・Eco-drive ・Use business communication bus. **3. Use energy-saving office equipment.** ・OA machine((e.g.)computers, copy machines) or appliances((e.g.)refrigerators) need lots of energy. We will replace them to energy-saving types. ・Save standby power.

	4. Reduce paper consumption ・By simplifying the conference materials ・By double-sided printing ・By reusing envelopes **5. Use recycled paper** ・copy paper, toilet paper **6. Use Recycled products** ・Stationary ・Working wear made of recycled fiber **7. Purchase the air conditioners or refrigerators that HFC(hydrofluorocarbon) is used as refrigerant.** ・HFC is one type of the Freon gas. It doesn't destroy ozone layer as chlorine is not included in their molecule. ・As HFC is greenhouse gas, we will try not to discharge the gas in the atmosphere based on the law : Act on Rational Use and Appropriate Management of Fluorocarbons (Act No. 64 of 2001) **8. Use the products with low greenhouse gas emissions** **9. Replace the vending machines to eco-friendly type** ・Old type of vending machine may be consuming lots of energy. After investigating the actual condition, we will try to replace eco-friendly ones as possible. **10. Others** ・Select simple packaging ・Try to repair products as possible

4. Pay consideration to greenhouse emission	**1. Suppression of energy consumption** ・Turn off the lighting where there are no people. ・Turn off the lights during the lunch break. ・Set the temperature of the air conditioner properly. Encourage cool biz warm biz. ・ Clean the air conditioner filter. (In summer and winter, try cleaning the filter before using the air conditioner.) ・Close the cover when not using heating toilet seat. ・ Turn off the air conditioner in the room not in use. ・Do not open or close doors or windows more than necessary when using air conditioners. Use blinds to reduce thermal load. ・Turn off the computer when not in use. **2. Reduce waste** ・Shredder should only be used for documents containing personal information created by the organization. ・Collect the toner cartridge of the printer and proceed with reuse. ・Appropriate disposal is required when OA equipment and cars are disposed of. **3. Strategic approach to measures against global warming** ・It shows a model to be a reference for energy conservation. And introduce it on the website. ・Clean the outdoor unit of the air conditioner. ・Check plant management and water supply facilities. ・Efficient operation of equipment ・Discussion with the researcher on the utility operation during the quiescence period in KEKB・PF and plan for economical operation.
5. Consideration for work-life balance ·Training for staff	**1. Provide staff training and information on global warming and energy conservation.** ・Make staff actively participate in training of other agencies concerning environment consciousness. ・Provide staff with information on environmental considerations by website. **2. Transmission of information** ・Publish and announce the operation plan on the website. ・Publish the amount of electricity and water usage on various conferences and on the website.

	・Notify the amount of electricity generated by sunlight. ・Publish KEK's CO2 emissions in fiscal 2023. **3. Education on energy conservation** ・Distribute posters and seals that enlighten energy conservation to various places. **4. Promote energy conservation measures** ・Verify at the end of the fiscal year plan and prepare the next year action plan.
6. others	**1. Promote energy conservation of laboratory equipment and effective use of resources** ・By full-scale operation of SKEKB accelerator, greenhouse gas emissions will increase from the previous year. Suppress this increase by considering the operation plan. ・Reduce CO2 emissions by effectively utilizing the energy of experiment equipment. At the same time strive to raise research results. ・Advance energy conservation of laboratory equipment. ・Reuse experimental equipment and laboratory materials as much as possible. ・Advance superconductivity for accelerator devices such as electromagnets.