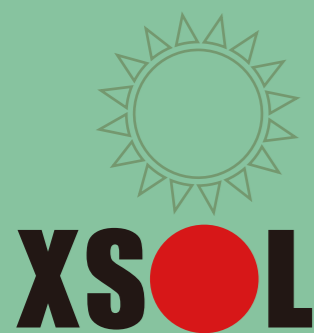


In order to leave a better world
for future children,
there is something we want you to know

XSOLUTION



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Energy
self-sufficiency
ratio:

50%

Reduce demand for fossil fuels and
make solar power the primary power source.

This is the answer to the question of
how to save this country and the entire planet.

Energy Revolution in the Post-Corona Age

Making solar power its primary power source is the solution for Japan

CONTENTS

02

Energy Revolution
in the Post-Corona Age

Making solar power its primary
power source is the solution
for Japan

06

A future in which solar power
becomes the primary power source

08

XSOLUTION



10

Here lies one answer to the
question of international strife
(world peace)

12

Here lies one answer to the
question of energy security

14

Here lies one answer to global
environmental problems

What Will the Post-Corona Age be Like?

The world-wide spread of COVID-19 made us fully realize that our “ordinary daily lives” are not guaranteed. Now, our daily lives are full of unordinary disasters, not only COVID-19, but also abnormal weather, locust outbreaks, and large-scale wildfires.

The Post-Corona Age we are plunging into is an age of uncertainty. Things we considered certain and absolute have been proven to be changeable and anyone may face disaster at any time.

Changing standards of value in an age of uncertainty

In this age of uncertainty, even the values attached to the economic system and money, what we once overconfidently regarded as certain and true, can easily become uncertain and unstable due to disasters.

For example, the outbreak of COVID-19 caused excessive demand for disposable masks and increased their price to dozens of times higher than normal. This is a lesson that stable standards of value are not based on money, but on essentials for our survival, such as water, food, housing, and energy.



Plunging into a cataclysmic age of uncertainty

Anyone may face disaster at any time.



38 degrees Celsius in the Arctic Circle ※1



Locust outbreaks ※2



Heavy flooding in China ※1



Wildfires in the U.S. and Australia ※1

**Values attached to the economic system
and money become fluid and unstable.
Essentials will become the only standard of value.**

Self-sufficiency of “Eessentials” .

In the long history of humanity, people used to be self-sufficient for essentials. However, in the modern world, we are mutually dependent to acquire them.

Even in times of uncertainty, those essentials maintain value. This is why those essentials are the only standard of value in these troubled times. For that very reason, it is very important to ensure the security of essentials, and we must be self-sufficient at least for energy.

Water	Food	Housing	Energy
Cannot be created	Can only be created in limited quantities	Cannot be created	Decentralized power generation (solar power)
×	×	×	○

Things for which we can be self-sufficient in the modern age

**It is vital to ensure the stable supply of essentials
Let us be self-sufficient, at least for energy.**

※1 Photos are for illustrative purposes only.

※2 Photo source: Koutaro Ould Maeno (2020), “About Desert Locust,” Japan International Research Center for Agricultural Sciences, July 31, 2020
https://www.jircas.go.jp/ja/program/program_b/desert-locust

Risks of depending on fossil fuels for energy

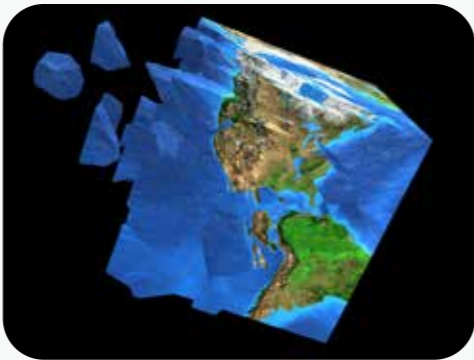
Depending heavily on fossil fuels, humans demand excessive material wealth and ignore changes in climate and the environment. As a result, emissions of carbon dioxide have increased, contributing to the advance of global warming. Countermeasures are a matter of global concern. However, global warming is only one aspect of the damage caused by depending on fossil fuels.

— Damage caused by fossil fuel dependency —

- International strife due to competition for fossil fuels.
- Wealth disparities due to uneven distribution and supply of fossil fuels.
- Potential risk of disruption of supply networks of fossil fuel due to natural and human disasters threaten the security of life.



- Global warming caused by increasing emissions of carbon dioxide.
-> climate and environmental change
- Climate change causes droughts, wildfires, typhoons, heavy rain, flooding, and ecosystem abnormalities, in turn producing epidemics and viruses and leading to food crises.
-> cataclysmic chain reaction
- Fossil fuels emit chemical substances causing hazardous gases, and atmospheric and water pollution. Disposal of plastic waste and other materials causes pollution of soil, water and the sea, leading to a variety of environmental pollution problems affecting living things.



Reducing fossil fuel dependency is an urgent issue

How to reduce dependency on fossil fuels?

Energy Revolution

— Expand the spread of alternate energy sources in place of fossil fuels —

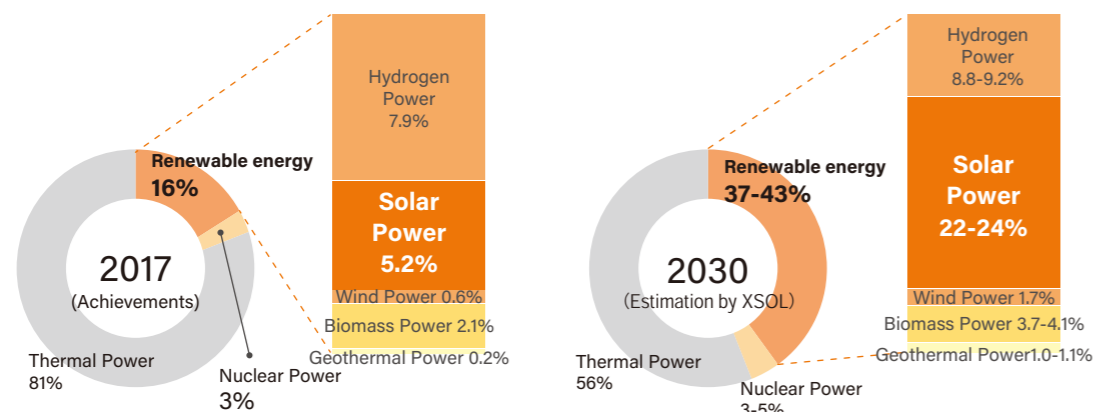
Solar Power		The most powerful decentralized energy source. It can be set up in various places on scales ranging from great to small. However, compared to other energy sources, conversion efficiency is low (expectations for technological improvements).
Geothermal Power		This is limited to regions such as volcanic zones. There are also barriers to introduction of geothermal power due to the expense and time involved in surveying etc.
Hydroelectric Power		Although costs of power generation and of management is low enough, few localities are suited to large-scale dams, and construction has already taken place in suitable locations.
Wind Power		Introduction is already in progress, with expectations for introduction of offshore wind power. However, there are limited regions suited for its introduction.
Nuclear Power		Economic rationality is disappearing due to the additional costs entailed by anti-terrorist equipment and security enhancement. Expectations for new types of fusion technology 50 years in the future.

At present, the only self-sufficient energy available to everyone easily and at low cost is solar power.

A future in which solar power becomes the primary power source

To achieve **50%+** energy self-sufficiency

Consideration of energy mix



The year 2030 and thereafter

- Renewable energy raises the energy self-sufficiency rate over 50% and **strengthens Japan's energy security.**
- Zero emission power becomes the major power source; **substantial improvements in environmental problems caused by carbon dioxide emissions**

Toward the PV100-Year Plan

If Japan, as a country with few natural resources, achieves a great increase of energy self-sufficiency with solar power as the primary power source, it will further push the spread of solar power and reduce dependency on fossil fuels throughout the world.

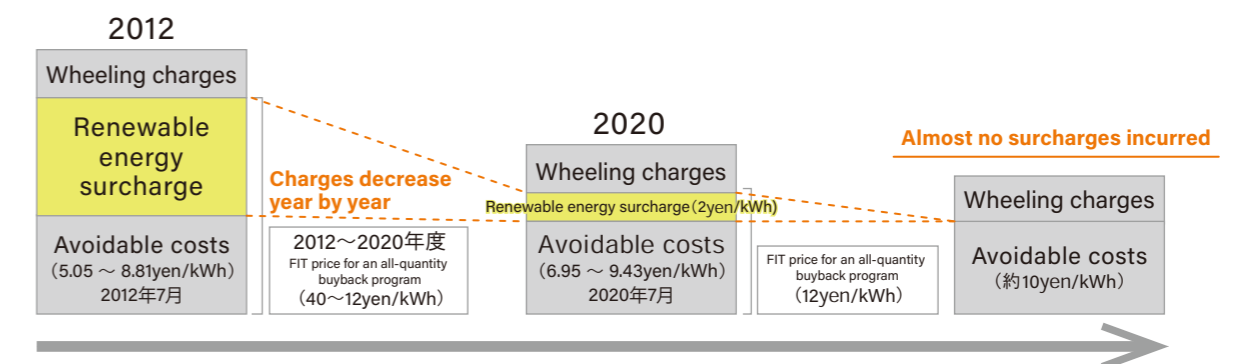
This is the answer to the question of how to save this country and the entire planet.

The path toward making solar power the primary power source

Considerations on the introductory amount of solar power in becoming the primary power source

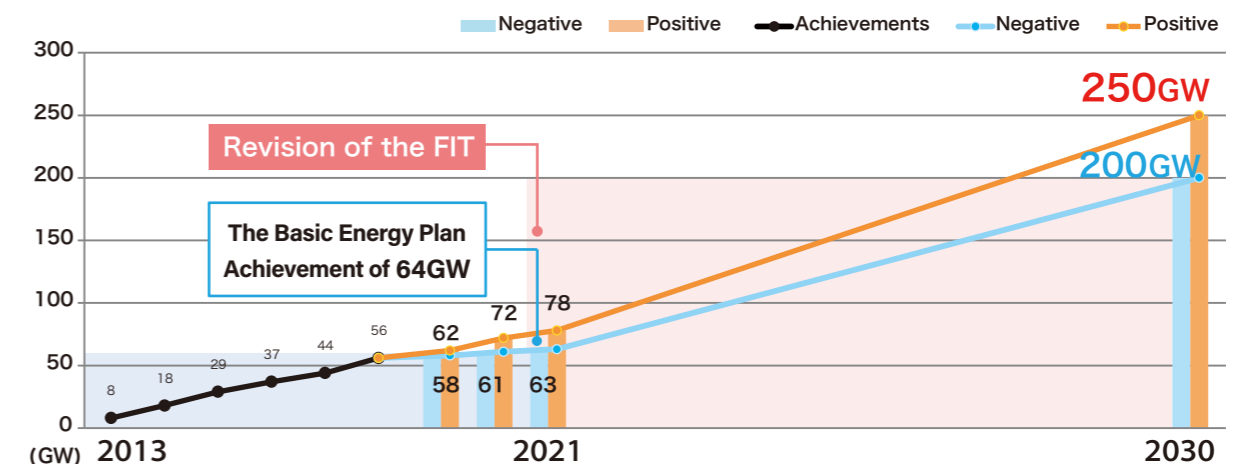
Since the FIT (Feed-in Tariff) began, the introductory amount of solar power has grown by leaps and bounds, accounting for approximately 5% of Japan's total power generation. The FIT has functioned well as a trigger. As a result, the generation cost of solar power has decreased dramatically to the point of the avoidable costs. This means that expansion of introduction (250GW in the year 2030) without FIT will be possible.

(About avoidable cost and charges)



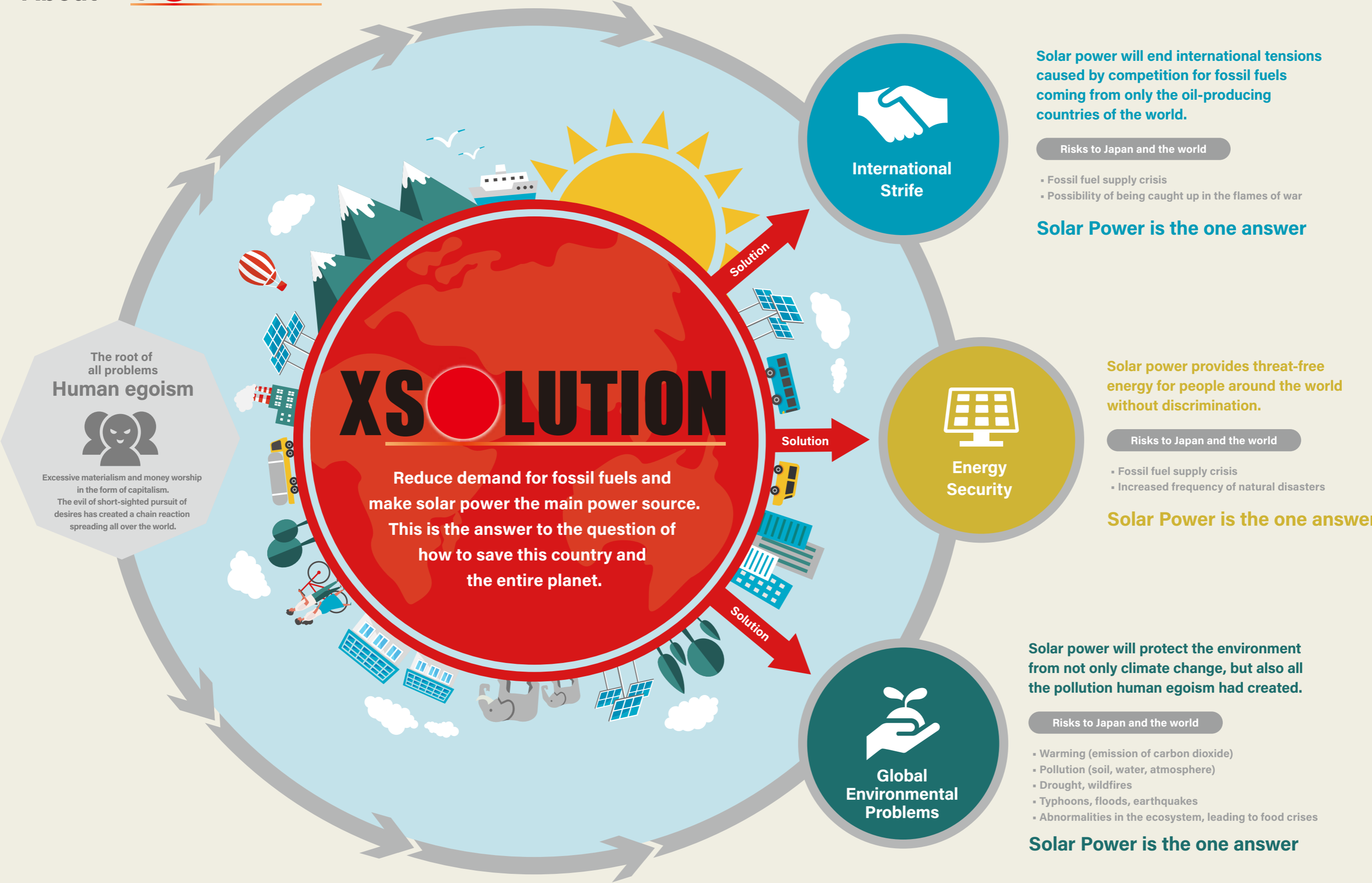
(Market introduction amount of solar power: Cumulative transition and forecast)

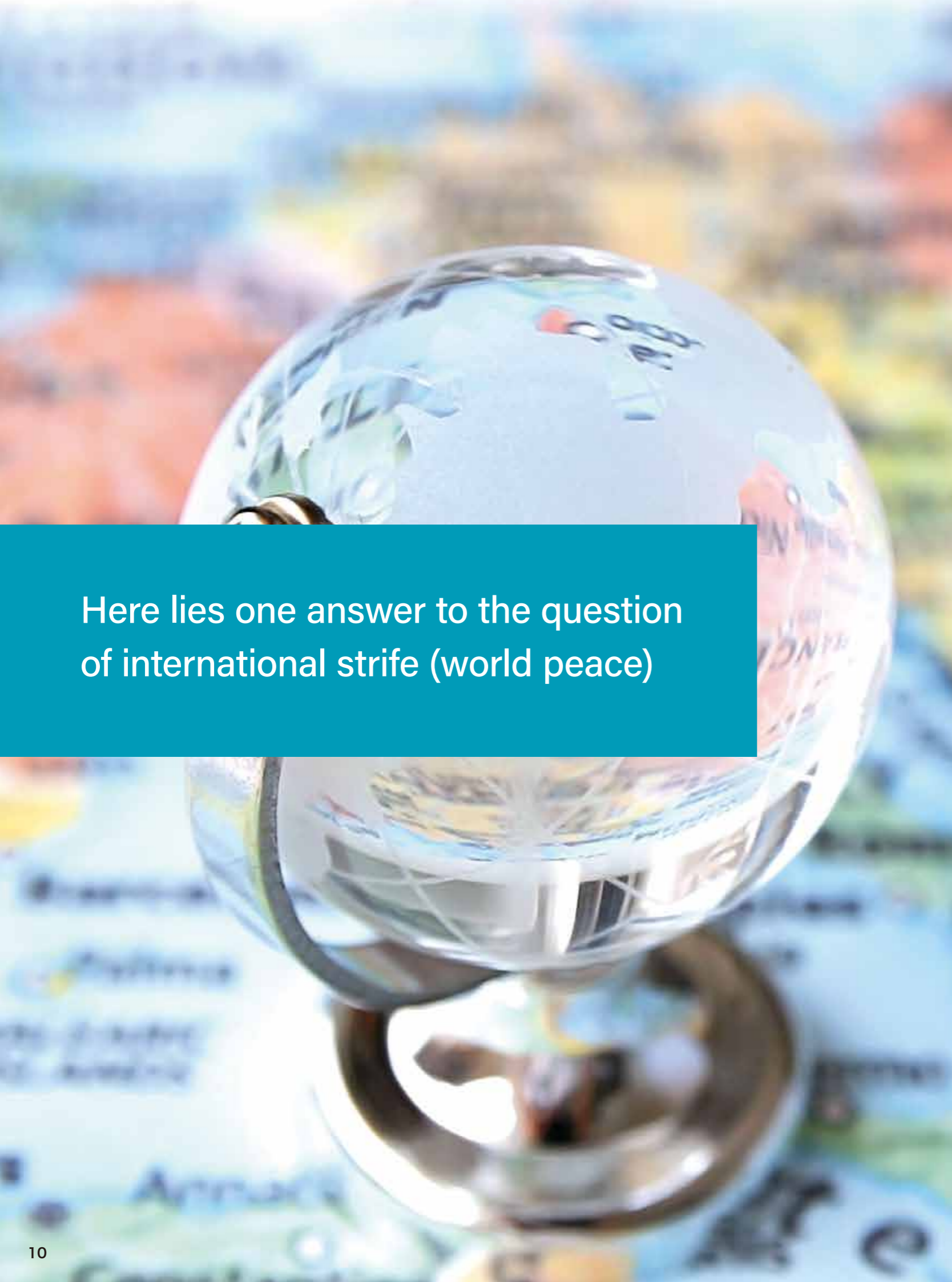
XSOL's own estimate (based on DC-Wp, including self-consumption rooftop projects)



Solar power generation, which will be introduced and expanded without FIT, will become Japan's infrastructure that is inexpensive, clean, self-sufficient and sustainable.

In order to realize the PV 100-Year Plan, **We have entered the next phase of introducing solar power.**





Here lies one answer to the question
of international strife (world peace)



international strife
(world peace)

The history of energy (fossil fuels) is the history of the competition it involves

It is said that 70% of the causes of international strife lie in competition for the rights to energy resources. The history of energy (fossil fuels) may be equated with the competition it involves. Strife and disputes concerning oil-producing nations generate refugees and other issues. Wealth disparities at national and regional levels is produced, fanning violence in the forms of terrorism, coups d'état, looting etc.

The issue of energy (fossil fuels) being dominated by a limited number of organizations

This issue arises from the fact that fossil fuels can only be obtained from a limited number of oil-producing nations. Other contributing factors include historical monopolies on the rights to the oil that are held by the wealthy or by royal families, along with ego-driven, self-interested monopolies on control rights exercised by mega capitalists, businesses, and political powers etc. Meanwhile, mechanisms governing output and supply are specialized by a limited number of regions and distribution systems, a situation in which we humans are caught up in a never-ending energy and fossil fuel crisis. Taking Japan and petroleum as examples, oil is transported from oil-producing nations via the sea. If conflicts, disasters or other emergencies cut this lone transportation route, Japan will inevitably and immediately fall into an energy crisis. Naturally, it should also be apparent that people in every nation risk being caught up directly in war.

Now is the time for spreading solar power to decrease demand for fossil fuels

To change this global energy situation, we must decrease dependency on and demand for fossil fuels. It is essential we make it possible to ensure a supply of necessary energy at the regional, national, and individual levels at all times and without discrimination or threats. To accomplish this, we must first extend the spread of solar power throughout the world, as it is a source of self-sufficient energy involving no dependency on other countries. If solar power can be obtained as the majority power source, demand for and dependence on fossil fuels will be greatly reduced.

Conflicts will decrease, and this will lead to a correction in the disparities between advanced and developing nations

If the demand for fossil fuels drops, so too will its value. If the value drops, conflicts and international strife centering on fossil fuels will disappear, as will the need for enormous military spending. Regarding the issue of disparity in wealth among regions, if for example even tiny villages lacking electricity become self-sufficient in energy, the quality of standards of living around the world will rise at once. These conditions will lead to corrections in the disparities in wealth between advanced and developing nations around the world. As these disparities generate violence and poverty, their disappearance will deter people from joining terrorist and other problematic organizations.



Here lies one answer
to the question of energy security



energy security

Risks accompanying inability to attain energy self-sufficiency

In recent years, the world has frequently been hit by natural disasters such as typhoons and earthquakes. These disasters cause not only direct damage in the form of collapsed buildings; they also interrupt the lifeline and infrastructure in forms such as blackouts. Such interruptions threaten the safety of life of many people and, when the interruptions are prolonged, affect daily life and create incalculable crisis-related fears. It is inability to create energy self-sufficiency that exposes individual and corporate users to such blackout-caused risks, as the electricity (energy) they use depends on external infrastructure in the form of power companies, large-scale power plants, and power system networks.

Risks borne by countries with a low ratio of energy self-sufficiency

The risks of inability to achieve energy self-sufficiency become even greater at the national level. In cases such as that of Japan, which depends on other countries for its energy and supplies less than 10% of its own energy needs, the country will fall immediately into an energy supply crisis in emergencies such as international conflict. As noted earlier, there is an extremely high risk of the sea transportation routes conveying oil and other products being severed in emergencies. As a result, this greatly threatens people's lifestyles, their safety and their ability to live in peace.

Decentralized power generation in the form of solar power is the only means of spreading energy self-sufficiency

The further spread of solar power, which promotes energy self-sufficiency, is the kind of effective solution required. To explain further, the issue concerns not only improvements in the ratio of total energy self-sufficiency at the national level but also the question of whether individual energy users can themselves supply the energy they use. That is to say, "decentralized power generation" is extremely important in times when power system networks are damaged, and at present solar power is the only means of bringing decentralized power generation into reality.

Securing a robust form of energy security free of exposure to energy supply risks

If nations, regions, corporations and individuals are able to supply their own energy without discrimination or threat by using solar power, people around the world will be able to avoid energy risks accompanying disasters. Further, the total energy self-sufficiency of each country will increase dramatically. Each will be able to secure energy without depending on other countries, which is to say without being pressured by external factors. In this way, the world will avoid being exposed to the risks of energy supply, and it will obtain a robust form of energy security. For Japan, with its low ratio of energy self-sufficiency, this is an urgently important issue.



Here lies one answer to global environmental problems

Global warming is only one aspect of environmental problems

In considering global environmental problems, there is a tendency for the subject of global warming caused by increased emissions of carbon dioxide to be taken up, but it is only one aspect of environmental problems. Aside from carbon dioxide and global warming, human egoism is the ultimate cause of destruction of the planet. We have environmental pollution (of water, the atmosphere, and of nature), earthquakes, and the frequent occurrences of cataclysmic, abnormal events around the world. In particular, climate change has led to droughts, wildfires, typhoons, heavy rain, flooding, and ecosystem abnormalities, in turn producing epidemics and viruses and leading to food crises.

Dependence on fossil fuels threatens the entire global environment

One cause of global warming, which is one factor in climate change, is said to be abnormal dependence on fossil fuels. Of course, fossil fuels have been essential in history to human development, and they are not in themselves evil. However, human egoism has led to an unnecessary, abnormally vast production of such fuels. Humankind's overdependence on fossil fuels has come at last to threaten the entire global environment. Also, warming and climate change are not the only effects of the abnormal dependence on fossil fuels. Hazardous gases emitted from chemical substances made from fossil fuels are generated, causing atmospheric and water pollution. Disposal of plastic waste and other materials causes pollution of soil, water and the sea, leading to a variety of environmental pollution problems affecting living things.

Reducing the use of fossil fuels and spreading the use of renewable energy forms while paying proper attention to nature and the environment will lead to solutions to global environment issues

By reducing the degree of dependency on fossil fuels, not only will climate change be slowed but also various pollution sources will decrease, leading to resolution of all types of global environment issues. Of course, the spread of solar power itself must not be allowed to contribute to destruction of nature and the large-scale production of waste. There are a number of essential requirements, including prohibiting construction projects involving nonessential and forced development of forests and the destruction of nature, joining forces with local areas and authorities to obtain their understanding and cooperation in restricting or preventing adverse effects on the scenery and environment, organizing a waste disposal system for glass, solar cell modules and other materials, and establishing recycling technology and frameworks.

Spreading renewable energy in the form of solar power and making it the main power source will change the planet and Japan's future

Solving the problem of dependence on fossil fuels is essential to resolving issues concerning the global environment, international peace, energy security, regional disparities etc. Of course, behind all these issues as the fundamental cause is human egoism. However, as we reflect on all that, by using as an energy resource solar power, which we may liken to a limitless downpour of "love from the sun," we will dramatically decrease the demand for and dependence on fossil fuels. That is precisely what will solve the various important issues and difficulties facing Japan and the world. By increasing the spread of abundant, clean solar power that can never be depleted by even a single kilowatt, we will be able to leave behind a world that is safe, at peace, equal, and fair for our future descendants.