LOGO

NARRATOR:

A series of programmes about this planet and what people are doing to it.

CHILDREN

The boundless energy of children! But even as our children sing and laugh -- their world is ever more divided into two worlds: the rich, and the poor.

In the world of the poor the vitality of youth, the hope for life are threatened.

As the competition for the world's dwindling resources intensifies, the poor everywhere dance on the verge of disaster. 500 million children are threatened with malnutrition or starvation. When there's not enough to go around their very lives may well come to an end.

Five hundred million children!

LABOUISSE VO:

For the great majority of the children who are our concern, from the poorest regions, living conditions may well slip from the barely tolerable to the desperate.

HENRY LABOUISSE
EXECUTIVE DIRECTOR UNICEF
ON CAMERA

HENRY LABOUISSE:

Now, in vast and very populated regions, conditions will get even worse. Unless urgent and adequate measures are taken as a matter of priority by all concerned, rich and poor alike.

UN BUILDING WITH SUN
SUPER TITLE "WASTE NOT"

ENERGY EFFECT

NARRATOR:

As the demands on our limited resources grow, energy has come to be valued as our most vital resource. Once considered cheap and abundant, today it is becoming perilously expensive, and our supplies are dwindling.

TRAFFIC

GATHERING WHEAT IN INDIA

In the developed nations, recent energy shortages threatened "normal" life and travel. But when the world of the affluent suffers inconveniences, the world of developing nations approaches disaster.

In India, lack of fuel for irrigation pumps, and shortages of petrochemical fertilizer cost the nation an estimated one million tons of spring wheat. Quadrupled prices and oil scarcities will probably force India to use less fertilizer each year. Widespread hunger and starvation seem all but inevitable.

VISNEWS FOOTAGE

About the same time, this is how British television noted the ominous beginnings of their energy crisis.

VISNEWS ANNOUNCER:

Along London's Oxford Street, the energy crisis is becoming painfully evident. Sales are off by as much as two-thirds during this week after Christmas - a time when bargain hunters traditionally boost

shopkeepers' earnings. To say the atmosphere was not electric would be putting it lightly.

"ENERGY CRISIS" SIGN

British government regulations have curtailed the use of electric lights for commercial purposes in an attempt to conserve energy. But gas lighting is not subject to the restriction and is being used as a substitute to keep shops open at night.

The energy crisis facing Britain is mainly due to the nation's coal miners and electricity workers taking industrial action to draw attention to their country wide labor problems. Cuts in oil imports and

"SORRY NO LIGHTS"

rising prices have helped create the power shortages and the partial blackout.

GAS LAMP

The prospects for the success of this year's midwinter sales have been dimmed. On Thursday, the first trading day after the holiday, most shops managed to stay

SHOP WINDOWS

open in the evening by using parrafin lamps for illumination. Some shops have their own generators which the government allows, and they're able to light their display windows.

NARRATOR:

STORE AND HEATER

Like most crises, the power shortage in Britain was met, at first, with a variety of sensible stop-gap solutions, and a

SNUFF FACTORY

Other and older established firms already have their bed of action. A snuff factory at Kendal has operated its own water wheel for years. The machinery, nearly a hundred years old, can still grind tobacco into half a ton of snuff a week.

NARRATOR:

50 MPH

But as England's crisis deepened, everything slowed down to conserve dwindling reserves. The people of Great Britain readily complied with emergency speed limits to save precious petrol.

SMOKELESS STACKS

The situation grew serious as factories without enough energy to maintain production slowly ground to a painful halt.

BORED LEISURE

For many, leisure gradually turned to boredom. For the poor, the financial burden worsened. Just keeping a job became a matter of desperation.

VISNEWS FILM
LONDON INDUSTRIAL AREA

VISNEWS ANNOUNCER:

Nearly three-quarters of a million British workers have been laid off since the three-day working week. The government introduced the measure to save power.

EMPTY FACTORY

This factory on a west London industrial estate was empty — like many all over the country. Another fifteen thousand workers are expected to register at employment offices tomorrow. For many the future looks bleak.

UNEMPLOYMENT SIGN

INTERVIEW ON CAMERA

INTERVIEWER:

Have you ever claimed unemployment benefits before?

WORKER:

No, I haven't.

INTERVIEWER:

How much worse off do you think you'll be now that the three-day week is here

WORKER:

Well, if it stays the way it is, I'll be bankrupt.

"SOS" CAMPAIGN

NARRATOR:

SOS! Switch Off Something! The British government's emergency campaign to conserve energy.

Business and industry complied.

Everyone found a way.

Switch Off Something!
A simple and obvious idea — and it worked.
The campaign saved 20% of domestic and industrial consumption.

Switch Off Something!

It proved how much electricity is usually wasted - and how much can be saved.

POWER STATION

The giant electric power station at Ratcliffe is a typical supplier of energy to this industrial nation. Here the fuel is coal. The plant uses pulverized coal at the rate of 1800 tons each hour.

GENERATORS

The four 500 megawatt generators have supplied more power to the nation in a year than any other station -- an amount greater than the entire output at Niagara Falls.

CONTROL ROOM

But the efficiency of even the best power station is limited. Sophisticated design ensures more electricity at less cost. The intricate controls guarantee greater safety and minimum air pollution.

STEAM

But 60% of the fuel burned goes into the air as waste heat. If growing world demand were met by more such plants - whether fueled by coal, oil or atoms - the waste heat generated would probably change the very climate of our planet. Some say that the resulting cloud - cover could make solar energy unavailable.

TRANSMISSION LINES & GRID

Vast transmission networks have become an accepted feature of the developed world. Yet this form of transmission loses another ten percent of the energy generated. Future technical solutions may cut this loss but for now, one way to conserve is by generating electricity locally.

PLAYERS GENERATORS

At the John Players factory in Nottingham, it was decided to save energy by building a plant which would generate its own electricity. High-efficiency gas turbines not only supply all the plant's power but recycle waste heat for factory use.

IS BUILDING

The overall design of this building features panel-insulation and minimum use of glass windows to maintain even temperatures through summer sun and winter cold. Those windows necessary for a pleasant atmosphere are thermally insulated to conserve both

INTERIOR

heating and cooling energy throughout the interior of the factory.

Such buildings are unusual. Energy-conservation is a surprisingly new idea in architectural design.

GLASS FACADE

Only the presumption of cheap and abundant energy brought vast glass facades into vogue. But suddenly heating and cooling costs have sky-rocketed.

CONSTRUCTION

Tomorrow's buildings - and tomorrow's homes - will most certainly be designed with energy conservation in mind.

SMOKESTACKS

Great Britain soon got going again. Conservation helped the nation through her energy crisis. Fortunately, this crisis was temporary. But perhaps Britain's example might be seen by the rest of the world as a way to survive future energy shortages, which may become a way of life.

NIGERIA

In a world where energy is running short the developing nations' problems are even more serious. Although their technology must improve, it is equally important

for them to develop in ways which avoid the energy-dependence problems of the industrial nations.

PUMP AND CARPENTERS

In many countries simple but effective hand-operated equipment can get the job done without costly fuels and elaborate machines.

OXEN

In an agricultural country where there is an abundance of forage, the use of animals might well be more efficient, at least for now, than the acquisition of expensive tractors which also require increasingly expensive - or even unobtainable - fuel.

WHEELBARROWS

Where labor is abundant and money is scarce, the labor-saving machines of the industrial world are of little use. Although in some situations even a wheelbarrow can substantially increase productivity, many tasks call for more complicated equipment. Most of the machines available to the developing nations today are not designed to fill their needs. New designs are needed

READING UNIVERSITY

At Reading University, in England, a new technology is emerging to solve the special problems of developing nations. Simple machines are being designed to perform a variety of tasks using a wide range of fuels.

STIRLING ENGINE

Any source of heat will run the Stirling engine: kerosene, coal, wood - whatever

is available. The machine, which can provide power for anything from a meat grinder to a lathe, is easy to operate and maintain.

HUMPHREY PUMP

Simple machines, even old and abandoned designs like the Humphrey pump, can be adapted to meet the special energy needs of developing nations.

WINDMILL

Throughout much of the world, wind is a readily available, and little used, source of power. New versions of old-fashioned windmills are being manufactured at the Industrial Instruments factory in Hastings.

BATTERIES

A windmill can be connected to a generator which charges banks of electric batteries. Even though the wind may be intermittent, energy stored in batteries can convert a simple windmill into a reliable generator.

TWO-BLADE WINDMILL

While electricity was cheap, the possibilities of windmills were overlooked. With today's jet-age understanding of aerodynamics, highly sophisticated designs are possible - windmills which will deliver power in a high wind, or hardly any.

KYRILUK ON CAMERA

KYRILUK:

This can be mounted on a roof. It is hermetically sealed and waterproof, and certainly should last twenty years or more, in this operation. It is fully protected against rain and water.

KYRILUK SOLAR PANELS

NARRATOR:
Jim Kyriluk of Industrial Instruments is one of the few people to have foreseen today's possibilities for windmills and solar panels. The new technology draws visitors from around the world.

DIAL AND SOLAR PANEL

On a small scale, solar panels, used in conjunction with windmills, provide a very effective means of getting energy from nature.

SUN AND WINDMILL

Solar power, available almost everywhere, has been slow in coming into large use. The major stumbling block so far has been the initial cost.

DR. ARCHER'S LAB

To develop inexpensive solar energy panels, Dr. Mary Archer of the Royal Institution of Great Britain is experimenting with silicone coatings which can convert the sun's energy into electricity at a reasonable price. Research indicates that the sun could be our major power source, but money for solar technology has not been made available. Large-scale solar generator will take many years to develop.

NIGER: SOLAR OVEN

On a small scale, experimental solar ovens made of simple aluminum foil and plywood are already in use in some developing nations. One hundred square miles of sunny desert

receives enough solar energy each hour to fill the energy needs of the entire United States for a year. Yet, solar energy, remains to be exploited.

CEYLON

The energy problems of developing nations are related to the production of desperatel needed food. A man can still plow with a draft animal. In terms of energy, such traditional methods actually produce food very efficiently. There are generally enough hands available to gather crops. But population pressures make it imperative that every acre yield more. The new stains of grain, require intensive use of fertilizers and pesticides -- which are derived from oil.

CROP DUSTING

Yields everywhere depend on petrochemicals. And fuel is desperately needed for irrigati pumps. Although by world standards the energy requirements for agriculture in developing nations are relatively small, they are a matter of survival or starvation.

FEEDING CATTLE

In the industrial nations, agriculture depends on large amounts of energy. It takes five times as much energy to raise beef as to raise cereal. Each head of cattle consumes about twenty times as much grain as is needed to feed one human being. In the United States, almost half of the grain harvest, wheat, corn and soy beans, is fed to cattle.

COMBINE

The energy-intensive methods of farming in the industrial nations would do little good for countries with small farms and limited investment funds. But with abundant energy, relatively few farmers can feed a nation. Five percent of the U.S. population feeds the entire country. And the state of Kansas produces as much wheat as Australia.

Farming equipment today, which often includes such luxuries as air-conditioned cabs, takes enormous amounts of energy to manufacture, distribute and maintain. Big yields depend on big investments of energy.

COAL

As worldwide demand for energy grows, supplies are threatened. Although coal reserves seem ample, the costs in terms of pollution are appalling.

OIL PUMPS PUMPING

If the consumption of oil and natural gas continues to grow at today's rate, we will have exhausted most of the world's reserves by the end of the century. The development of alternative sources offers hope for the distant future. But now a new respect for the importance of energy is imperative. What we have left we must conserve.

"PROFLIGATE USE" MONTAGE

Industrial nations are gobbling up energy in happy competition and, by example, encourage developing nations to do the

same. The demand for energy has been growing almost faster than we can extract traditional fuels from the ground.

It is apparent that all of us must conserve If only to "buy time" while alternative sources are developed, the squandering of a limited and precious resource must stop.

STOPPED PUMPS AND SILENT REFINERIES

Today the bottom of the barrel is in sight. When our conventional fuels are used up, they will be gone forever. It's only a matter of time.

"STOPPED" CITY

Future energy shortages for the industrial nations might echo the experience of Great Britain: a loss of luxuries, a slowing of industry, a loss of jobs, crippled transportation. But for the rich, life will go on.

DR. BORLAUG IN GRAIN FIELD WITH STUDENTS

But what about the developing countries? Dr. Norman Borlaug, who developed the high-yield strains of grain that came to be calle the "Green Revolution", has repeatedly warned the world: "Today's energy shortage imperil what had seemed the one last hope of feeding a hungry world. The Green Revolution depends on oil". Oil for irrigation pumps -- oil for pesticides -- oil for fertilizer -- oil makes the high yields of the new grains possible.

For the developing nations, life itself is threatened.

DR. NORMAN BORLAUG ON CAMERA

DR. BORLAUG:

The world is running out of arable lan
And there are 78 million more people
that come into the world every year.
That means that even to maintain our
present, completely inadequate dietary
standards, we have to increase world
cereal grain production 25 million
metric tons a year.

Now unless we can do this, we will
have chaos, political social chaos,
and we have got to make every acre
or every hectare of land produce
more than it has produced before.
Or we are going to run out of food.

MONTAGE OF CHILDREN

NARRATOR:

And what of the children? Today the questio
must be asked "Am I my brother's keeper?"
The children of the world depend on us.
They are perhaps the most precious resource
in our threatened environment.

Rich and poor alike, when there's not enough
to go around, we must ry to ensure their
happiness -- their growth -- and their
survival.

Where people already spend most of their
meagre income on scarce food, they can't
adjust to endlessly increasing prices.
Environmental destruction affects all of us-
there are few distinctions based merely on
economic factors. But if the poor of
necessity must wisely husband their dwindlin
resources, the rich must conserve, so the
poor can survive.

Even as our children play and laugh - their world is ever more divided into two worlds: the rich and the poor. The vitality of youth, the hope for life in the world of the poor, is threatened.

As the competition for the world's dwindling resources intensifies, the poor everywhere live on the verge of disaster. As our population grows, there will be more and more hungry mouths to feed. Even today, 500 million children are threatened with malnutrition or starvation. When there's not enough to go around their very lives may come to an end.

Five hundred million children.

SUPER END CREDITS