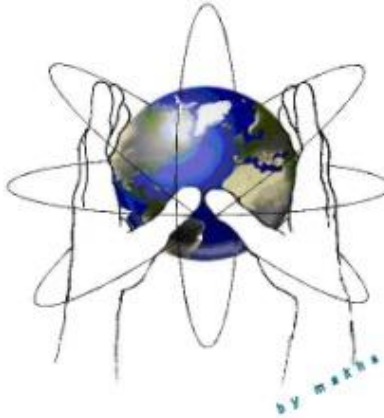


# Comitato per una Civiltà dell'Amore Committee for a Civilization to Love

*For a new development model*

***A Programme for nuclear weapon conversion into  
peaceful development projects for poor Countries***



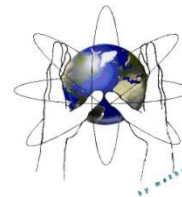
***Ing. Massimo Sepielli - Ing. Giuseppe Rotunno***



# Comitato per una Civiltà dell'Amore



## In Italia nasce il The Programme for nuclear conversion and peaceful development is born in Italy



1989 1° Italian Conference of “**Programma sul disarmo nucleare – energia per strategie industriali – sviluppo del mondo**”, Università LUISS, Roma, 28 Novembre, with the participation of Edoardo Amaldi (bachelor of Enrico Fermi), Giuseppe Rotunno, Elio Sgreccia, Mario Silvestri, Vittorio Canuto, Renato A. Ricci, Vincenzo Tornetta and other promoters of the Programma.



E. Amaldi

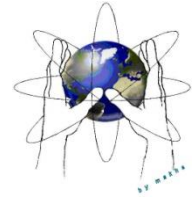


E. Fermi





# History of nuclear conversion initiatives



**1992**

1° International Symposium by STES e A. De Gasperi Foundation, involving scientists and experts from USA, Russia, Japan and Europe , on nuclear weapon conversion into fuel for peaceful power and development, **with opening message of Pope John Paul II.**

**1993**

USA-Russia Agreement on the Programme for nuclear conversion “**Megatons to Megawatts**” investing **20.000 nuclear warheads over 20 years** ([www.usec.com/megatonstomegawatts](http://www.usec.com/megatonstomegawatts)).



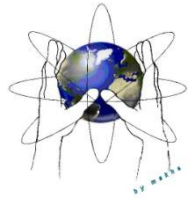
Reagan  
And  
Gorbacioy



Yeltsin  
and  
Clinton



## “Megatons to Megawatts”: which follow-up?



### The New Programme “Megatons to Development”

Is aimed at dismantling the remaining **nuclear warheads** on disarmament, to produce nuclear fuel , by downblending HEU with natural or depleted Uranium , even from radwaste, and **saving the economic benefit coming from nuclear conversion to Poor Countries development**

Such a newly reformulated Programme has been proposed this way by

Organization Group GPNP

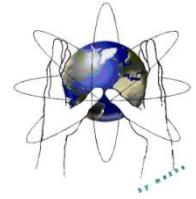
(GPNP – Gruppo di Promozione del Nucleare di Pace)

promoted by

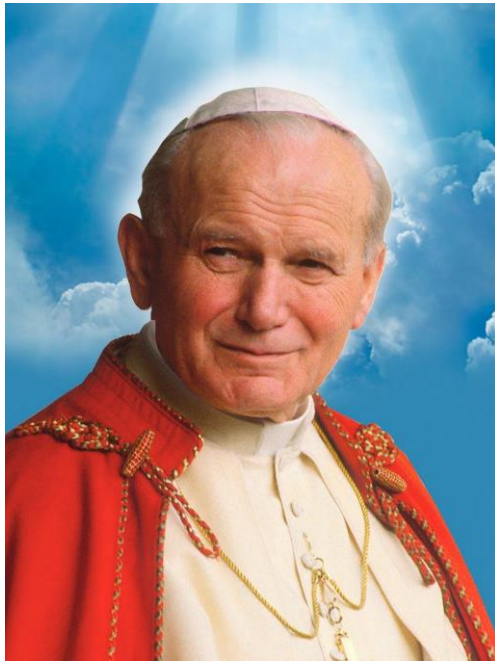
Comitato per una Civiltà dell’Amore.



## Objectives of the Programme (1/2)



**Peace in the world through Disarmament and nuclear conversion**  
by involving societal organizations and informing public opinion at any level  
(i.e. international Institutions, Governments, Industries, NGO, citizens)



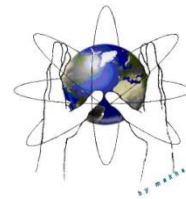
**Giovanni Paolo II**



**Walking for Peace - 2000**

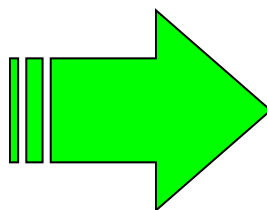
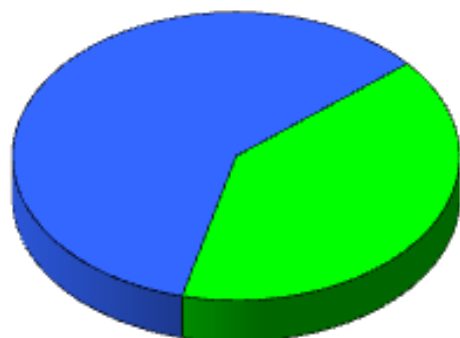


## Objectives of the Programme (2/2)



**Economic share saved from conversion of military Uranium to uranium fuel for civil purposes, to be destined to the **Development** of Poor Countries and **International Cooperation** towards the reduction of the world hunger and poverty**

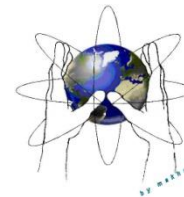
**Share for peace**



**Part to be turned to the development of allo sviluppo con **micro-projects**, mainly based on **Renewable Energies**.**



## Main benefits coming from nuclear conversion for a international development



Increasing **Safety and Peace** in the world;

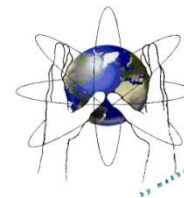
Financing **programmes e micro-projects** for **development of poor Countries** through the economic share of nuclear conversion and for improving welfare in the UDC).

Conversion of nuclear weapons to civil purposes, so **reducing CO2 emissions and related climate changes.**



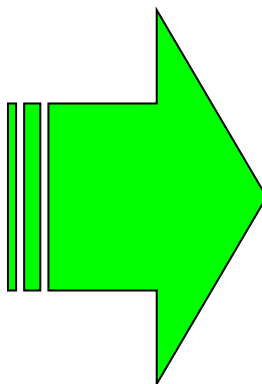
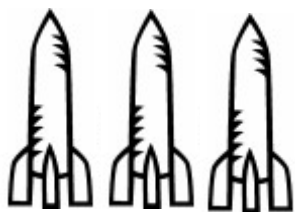


# Objectives of the Programme of Nuclear Conversion

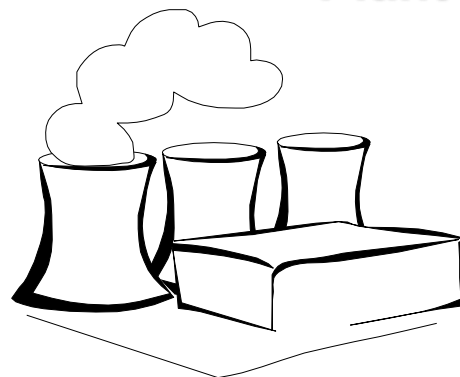


**Main purpose of the Programme is the conversion of nuclear  
weaheads into fuel for power generation devoted to the  
development of poor Countries**

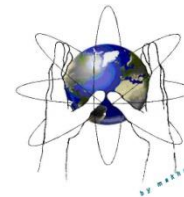
**Nuclear  
warheads**



**Nuclear Power  
Plant**



# How the Programme works



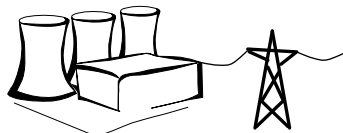
**160  
nuclear  
warheads**



**4 ton HEU  
to convert  
into fuel**



**Nuclear Power  
Stations(1.000 MW)**



**36 TWh  
without CO2**



**Economic  
Sharing**



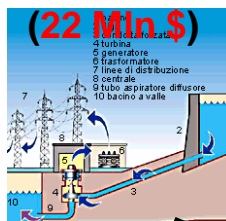
**>> 40 Mln \$**



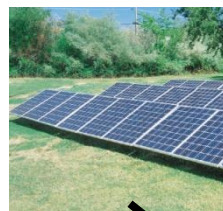
**Education and Health  
(10 Mln \$)**



**15 mini-  
hydro  
installations  
500 kW  
(22 Mln \$)**



**200 FV  
installations  
10 kW  
(8 Mln \$)**



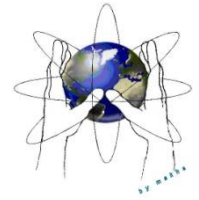
**Congo**



**CO<sub>2</sub> emissions  
avoided  
About  
10 MTons/year**



## Organization group (GPNP)



2006

Grouping of Organizations / Institutions (GPNP), scientific, industrial, accademia, societal, NGO for promoting the Programme “*Megatons to Development*” on conversion of **nuclear warheads** .

Trade Unions



University



Nuclear Industry



NGO

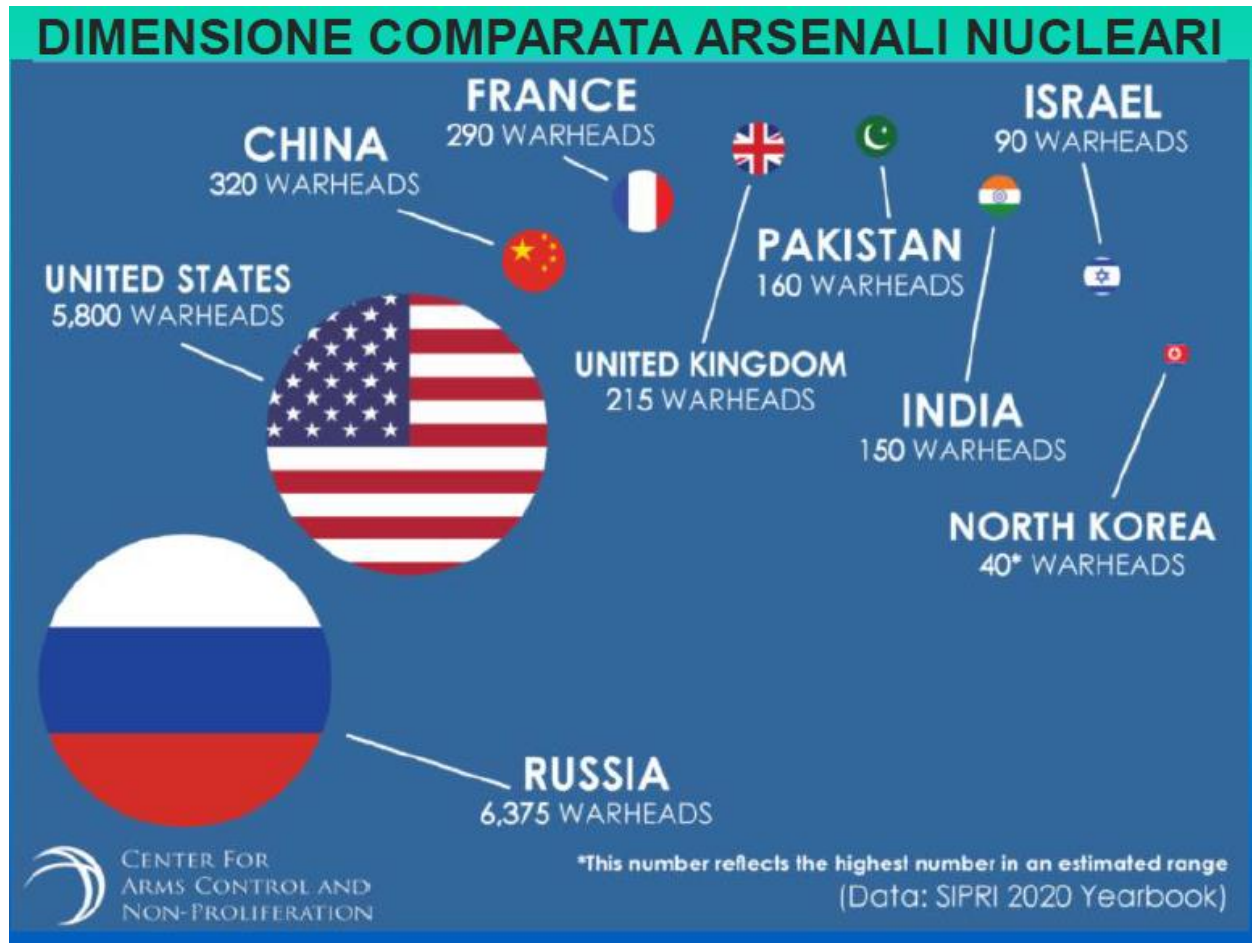
*Comitato per una  
Civiltà dell'Amore*

**GPNP**



# Bomb destruction

The only way?

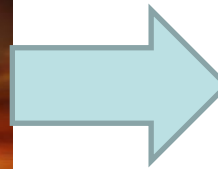


**Nuclear power plants !!!!!!!!!!!**

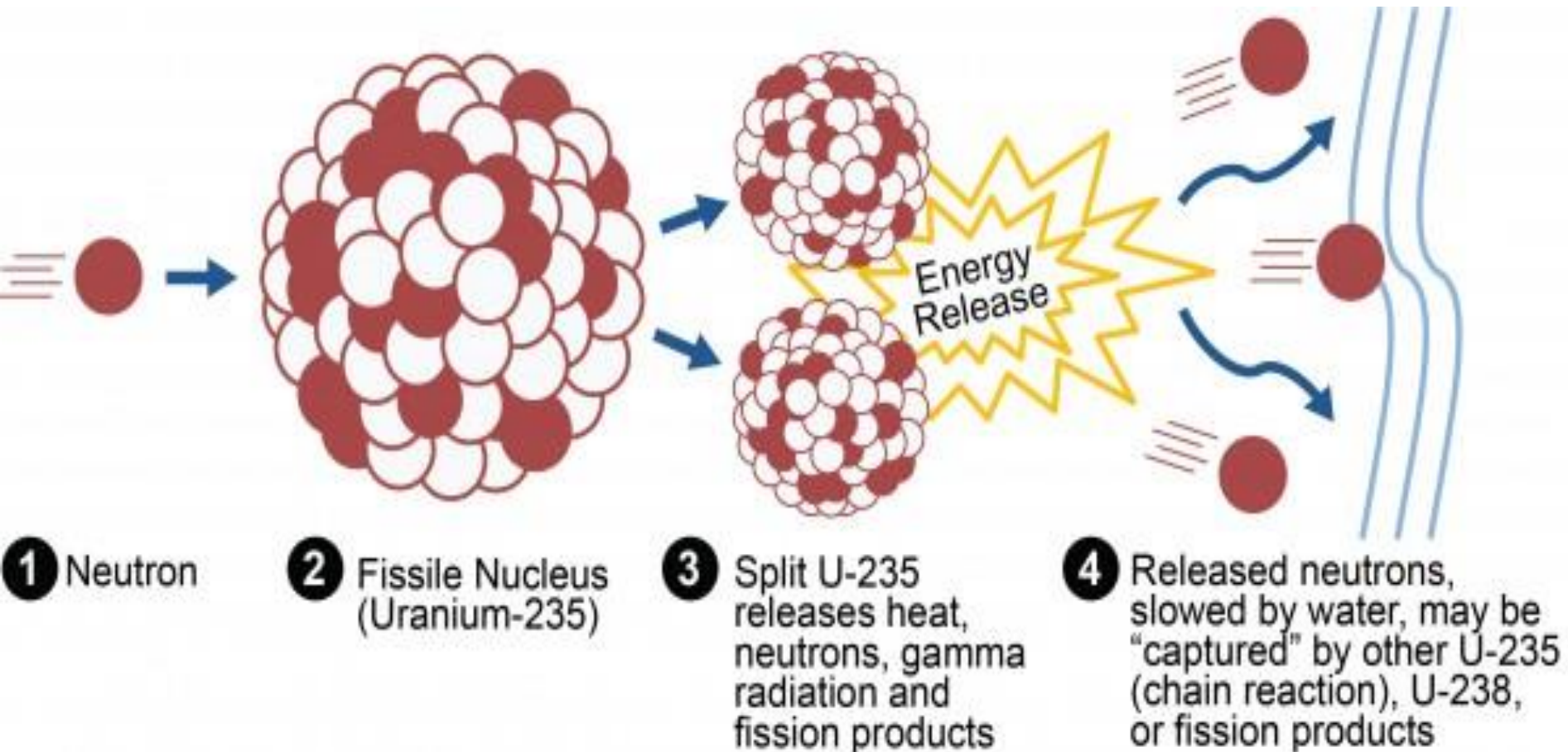


# Nuclear Re-Conversion

From Warheads to electricity power



# Nuclear fission: the only way



# The difference between military and civil use of nuclear: **enrichment grade (LEU / HEU)**

- 4-5% di U235 / Pu239 in U238 (LEU)

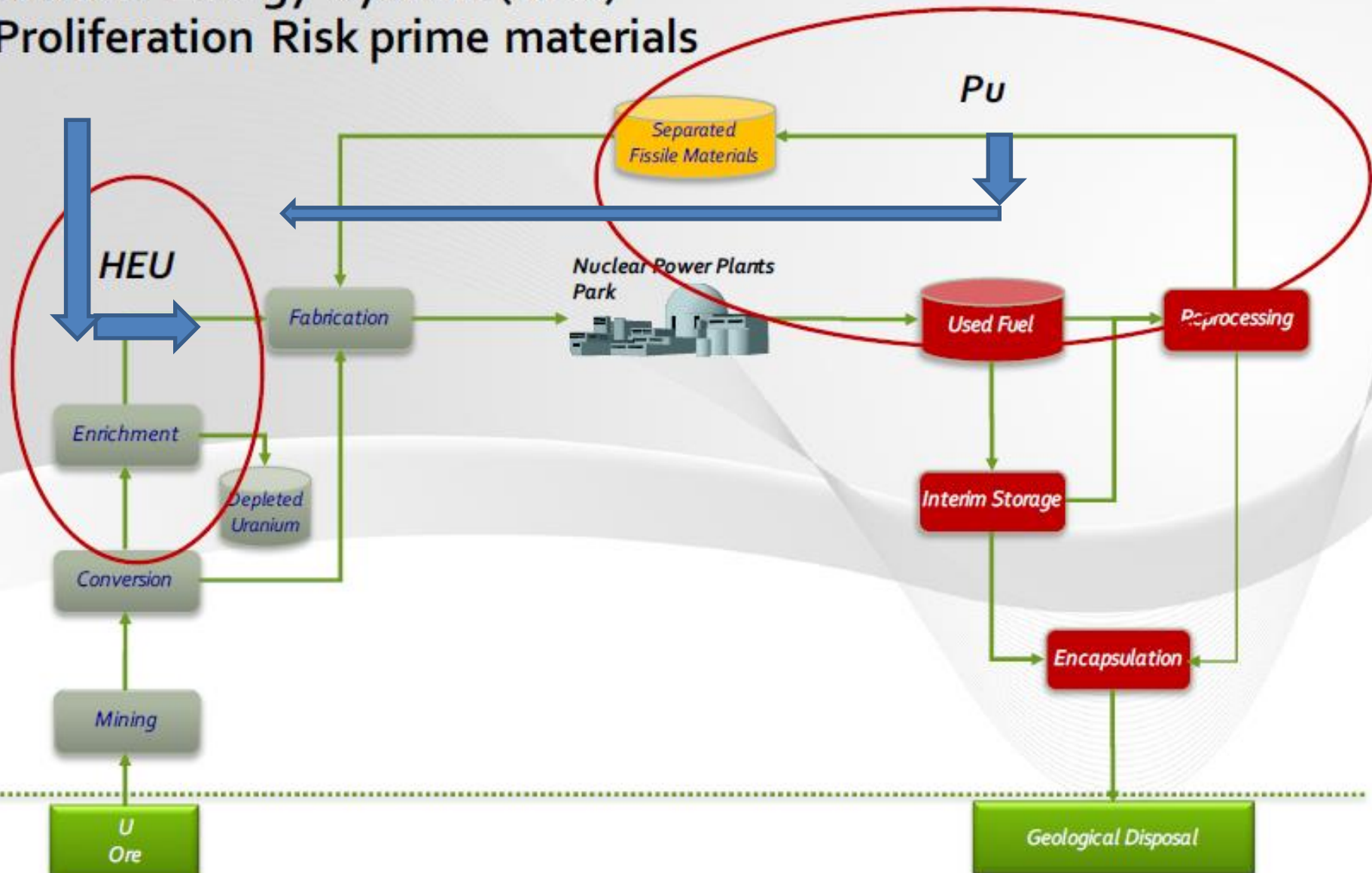


- 93% U235 / Pu239 in U238 (HEU)



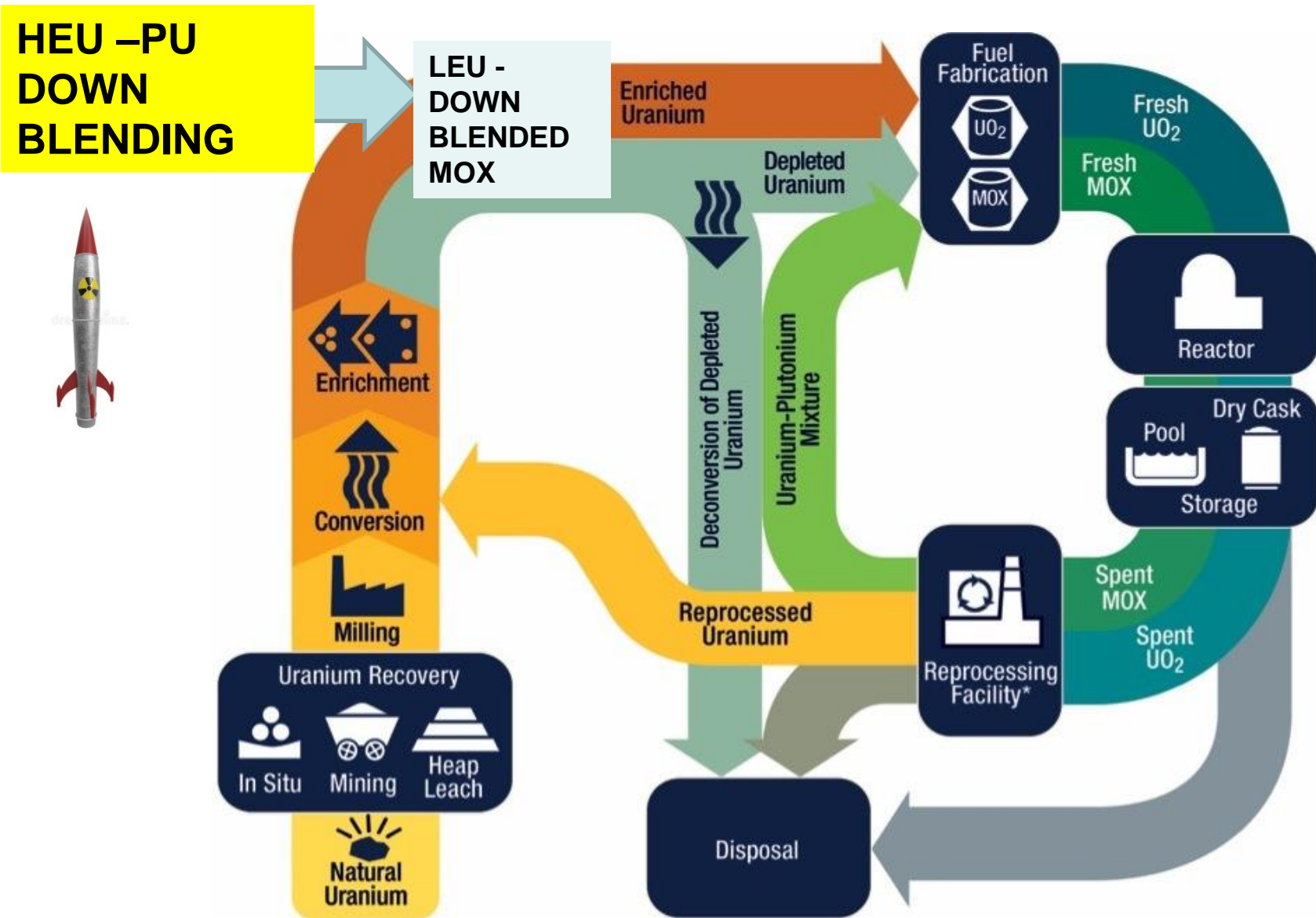
# Fuel cycle: risks and opportunities

Nuclear Energy System (NES)  
Proliferation Risk prime materials





# The basic idea



# DOWNBLENDING FACILITIES

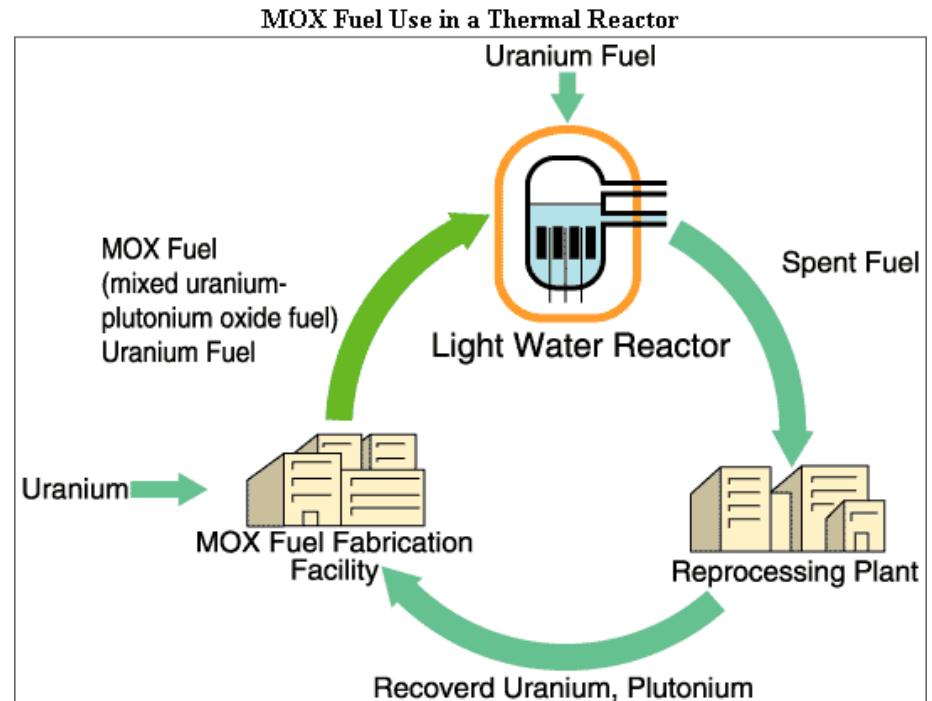


# Downblending by natural U or depleted U to different enrichment grades

ARRICCHIMENTO $\text{UO}_2$ (%)	CASO DILUIZIONE CON U NATURALE (0.72% DI $\text{U}^{235}$ )	CASO DILUIZIONE CON URANIO ALLO 0.2% DI $\text{U}^{235}$	CASO DILUIZIONE CON URANIO AL 1.2% DI $\text{U}^{235}$
5.0	1900 – 2400	1600 – 2200	2100 – 2700
	1990 - 2490	1730 – 2230	2230 - 2880
4.5	1800 – 2800	1900 – 2400	2400 – 3200
	2210 - 2860	1920 - 2480	2480 - 3200
4.0	2500 – 3200	2100 – 2800	2900 – 3700
	2490 - 3210	2160 - 2790	2790 - 3600
3.5	2900 – 3800	2400 – 3200	3500 – 4500
	2840 - 3670	2470 - 3190	3180 - 4120

# Burning MOX FUEL ( $\text{PuO}_2 + \text{UO}_2$ )

- ❖ Burning of  $\text{UO}_2$ /  
Pu mixed oxide
- ❖ Recycling of Pu  
resulting from  
nuclear  
warheads
- ❖ III e IV  
generation  
reactors





# Global Nuclear Power Plants

441 NUCLEAR POWER REACTORS  
IN OPERATION

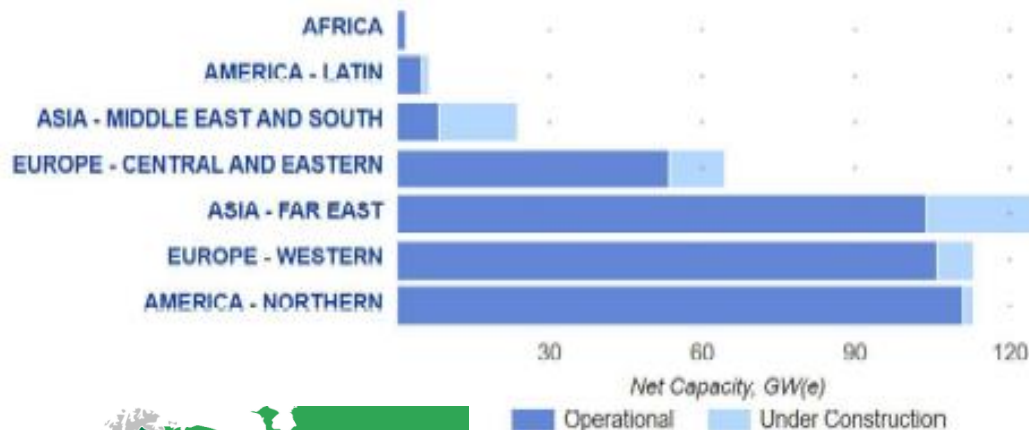
393 977 MW<sub>e</sub> TOTAL NET INSTALLED  
CAPACITY

51 NUCLEAR POWER REACTORS  
UNDER CONSTRUCTION

53 870 MW<sub>e</sub> TOTAL NET INSTALLED  
CAPACITY

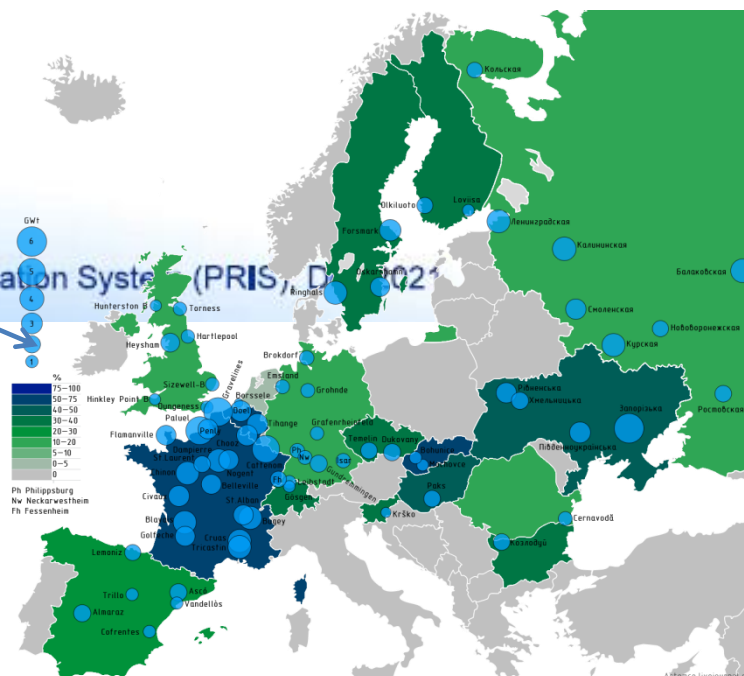
19 170 REACTOR YEARS OF  
OPERATION

REGIONAL DISTRIBUTION OF NUCLEAR POWER CAPACITY

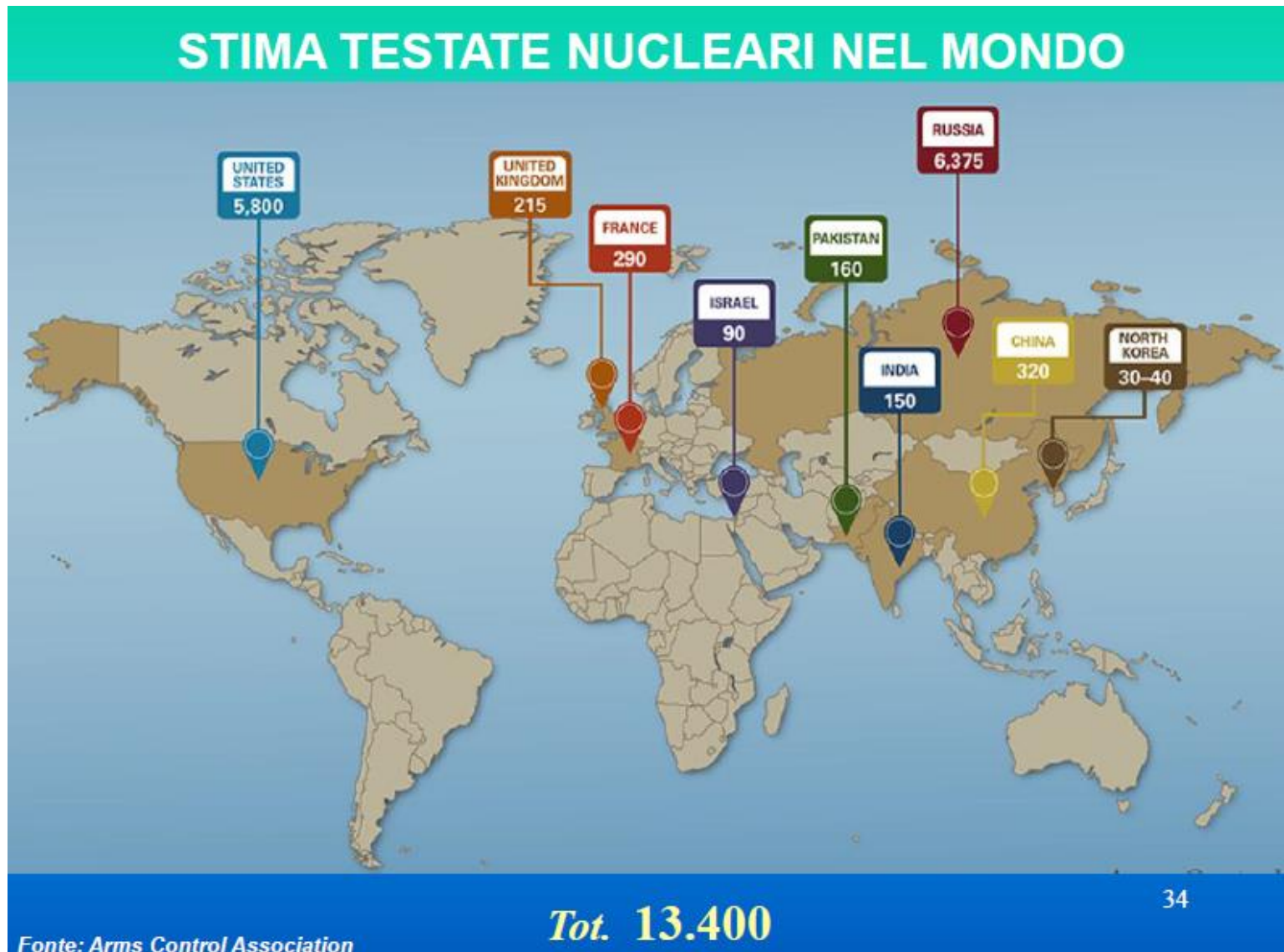


106 NPP  
in Europe

Source: IAEA Power Reactor Information System (PRIS, Dec 2021)



# Nuclear warheads estimation





There is still the problem of eliminating:

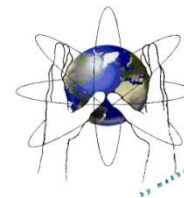
- ▮ about 1,300 t of HEU (sufficient for over 50,000 bombs) \*,
- ▮ about 500 t of Pu (harder to eliminate) \*.

\* 2015 data from the International Panel on Fissile Material (based on declarations to the IAEA of 31/12/2014)

- ✓ M2M was a tool for disarmament, fight against proliferation and nuclear terrorism
- ✓ M2M was the main economic case of reconversion of weapons and military installations for civil purposes
- ✓ M2M was an important piece in the relations of



## International context



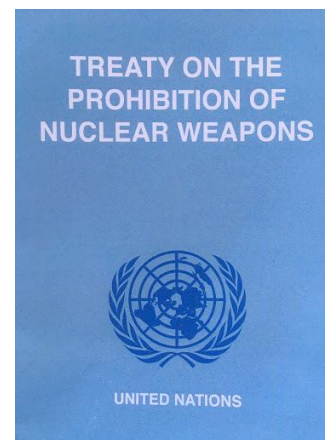
### **In the framework of ONU Treaties:**

EURATOM Treaty – 1958 – Peaceful use of nuclear energy

Non Proliferation Treaty of Nuclear Weapons (NPT) – 1968

Comprehensive Test Ban Treaty Org. (CTBTO) – 1996 – *Under preparation for ratification*

Treaty for Prohibition of Nuclear Weapons (TPNW) – 2021





# Messages to European Union

## II.5- Implications in the nuclear debate

1. To reflect on the essential contribution that nuclear power plants provide for an effective solution to the problem of atomic arsenals
2. To highlight that nuclear power plants do not feed proliferation but reduce it
3. To overturn the ever-existing link in public opinion between atomic armaments and nuclear power plants
4. To highlight the need for safe, sustainable nuclear power plants for the future world economy

# What Europe Union can do towards the nuclear disarmament?

- Foster a new updated Programme “from Megatons to Megawatts”, enabling the utilization of 100 Gwe NPP operating in Europe to date.
- Help divide Peace economic sharing saved from the bomb reconversion into electricity for sustainable development of UDC
- Provide integral Safety of its Member States towards the nuclear peace for everybody.

# Petition

This is the reason way a Petition has been launched for Europe to the world, already signed by numerous scientist and good willing citizens.

Whoever would join, could access the web site at the following address:

<https://www.change.org/p/pace-nucleare-una-proposta-europea-per-il-disarmo>

2000  
collected so far

DOCUMENTO CONCLUSIVO DEL CONVEGNO  
SOCIETA' CIVILE E CONVERSIONE DELLE ARMI NUCLEARI:  
UNA PROPOSTA EUROPEA PER IL DISARMO

con il Patrocinio della Rappresentanza della UE

Roma, 11 Febbraio 2022

Come emerso dagli interventi della Società Civile durante i Lavori di questo Convegno,  
**chiediamo che**

la UE sia il principale Promotore mondiale di Pace, proponendo, da subito, l'avvio di un progressivo Disarmo Nucleare e globale a cominciare dalle Potenze che si confrontano sul nostro Continente, così da non incorrere nel rischio di una Terza Guerra Mondiale.

L'apocalisse della guerra nucleare può avvenire in qualunque prossimo frangente, per cui, solo con il disarmo e l'effettiva riconversione delle armi nucleari in energia di pace, possiamo liberarci definitivamente da tale incombente minaccia.

Il Piano di Disarmo nucleare può essere avviato, secondo quanto condiviso dalla COMECE al Convegno e **chiediamo** che sia tenuto in debita considerazione nelle prossime Conferenze sul disarmo, in particolare nella imminente X Conferenza di Riesame del Trattato di Non Proliferazione nucleare (TNP).

**Chiediamo** che in quella Sede venga istituzionalizzato un "Tavolo di Lavoro permanente sul Disarmo Nucleare", per individuare ed avviare concretamente le azioni necessarie a perseguire gli obiettivi dettati dall'Art.VI del TNP, in un confronto costruttivo tra Stati con Armi Nucleari e Stati senza Armi Nucleari, finalizzato a concordare le azioni che costruiscano il percorso progressivo per un effettivo Disarmo nucleare.

**Chiede inoltre** che nell'agenda dei lavori della Conferenza sia inserito il tema della "conversione degli arsenali nucleari in risorse" a beneficio, in particolare, dei Paesi in Via di Sviluppo.

A tal fine la UE potrà assicurare in suo impegno di Pace nucleare favorendo la disponibilità sia degli impianti e delle competenti risorse nucleari presenti al suo interno, sia del quadro istituzionale dell'Euratom, fondativo della stessa Unione.

La conversione degli arsenali nucleari farebbe riferimento a quanto già realizzato con successo dal "Piano Usa-Russia "Megatons to Megawatts", attraverso l'eliminazione delle prime 20.000 testate nucleari, in modo che le risorse economiche ricavate dall'utilizzo a fini pacifici del combustibile nucleare ottenuto dal Disarmo, possano essere utilizzate per lo Sviluppo sostenibile nei Paesi poveri, come è stato evidenziato dalle analisi tecniche ed economiche promosse dal Comitato per una Civiltà dell'Amore (v. [www.nuclearforpeace.org](http://www.nuclearforpeace.org)).

Firmato

COMITATO PER UNA CIVILTÀ DELL'AMORE

Giuseppe Rotundo

ORDINE FRANCESCANO SECOLARE-OFS Lazio

Antonio Fersini

UNIPAX-UNITED PEACERS

Orazio Parisgno

MOVIMENTO EUROPEO ITALIA

Virgilio Dastoli



N.B. SEGUONO LE ALTRE ADESIONI