Tribal Energy Webinar Series:

Energy Transitions Initiative Overview and Programs

U.S. DEPARTMENT OF ENERGY

Office of ENERGY EFFICIENCY & RENEWABLE ENERGY

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Outline

1. ETI Background
2. ETI Programs and Tools
3. Technical Assistance Use Cases

Energy Transitions Initiative

ETI Mission

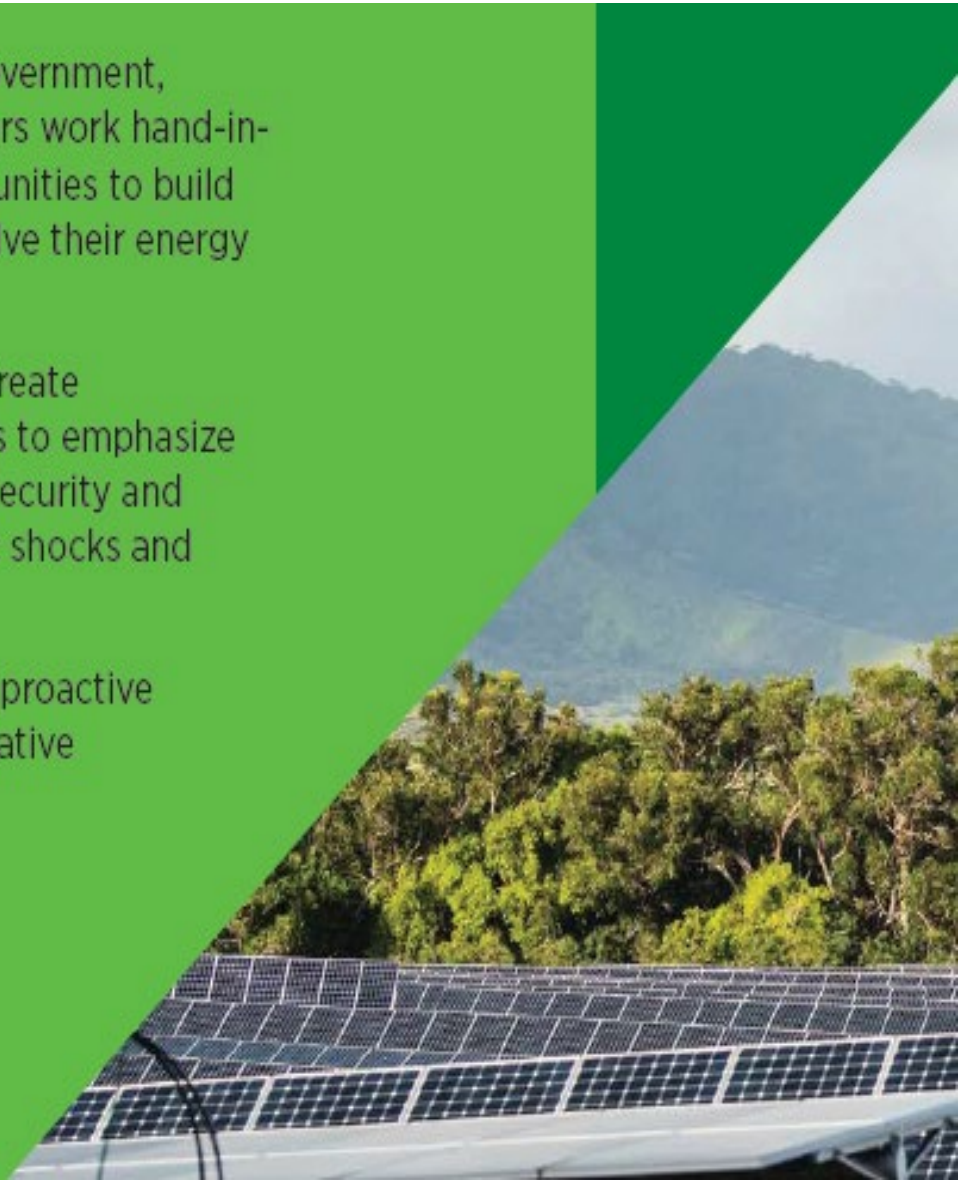
The U.S. Department of Energy's Energy Transitions Initiative (ETI) supports remote and island communities with the development of resilient clean, energy solutions. ETI offers research, resources, user-friendly tools, and technical assistance to help communities achieve goals related to:

- Sustainable sources of low-cost energy
- Community and utility resilience to natural disasters
- Supporting local energy priorities and community self-reliance by bolstering institutional capacity

Through ETI, a broad coalition of government, nonprofit, and private-sector partners work hand-in-hand with island and remote communities to build the technical capacity needed to solve their energy challenges.

ETI's partnerships are designed to create opportunities for these communities to emphasize local resources to promote energy security and support their resilience to economic shocks and natural disasters.

ETI offers practical tools to support proactive energy planning that includes innovative technologies, based on a replicable framework built from decades of collaborative work in these communities.

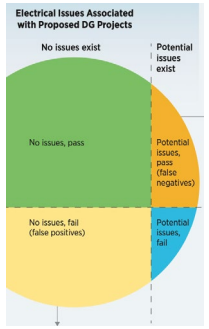


ETI Activities

Technical Assistance to Communities

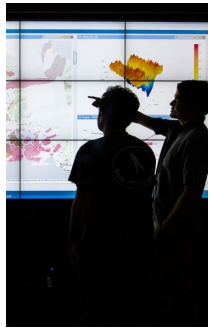
Administer the Energy Transitions Initiative Partnership Program, as well as quick response TA for island and remote communities. Focused on leveraging technology-neutral, energy sector and local expertise for co-development of research and data-based local solutions building toward resilient energy systems and improving broadly available tools with rich local experience. Builds on foundational tools supported through ETI broadly

Foundational Resources



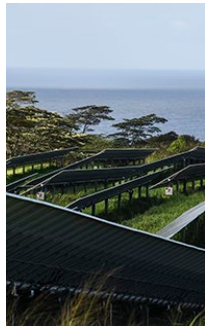
Electrification and Microgrids Research

- Outline specific technical, economic, and regulatory challenges



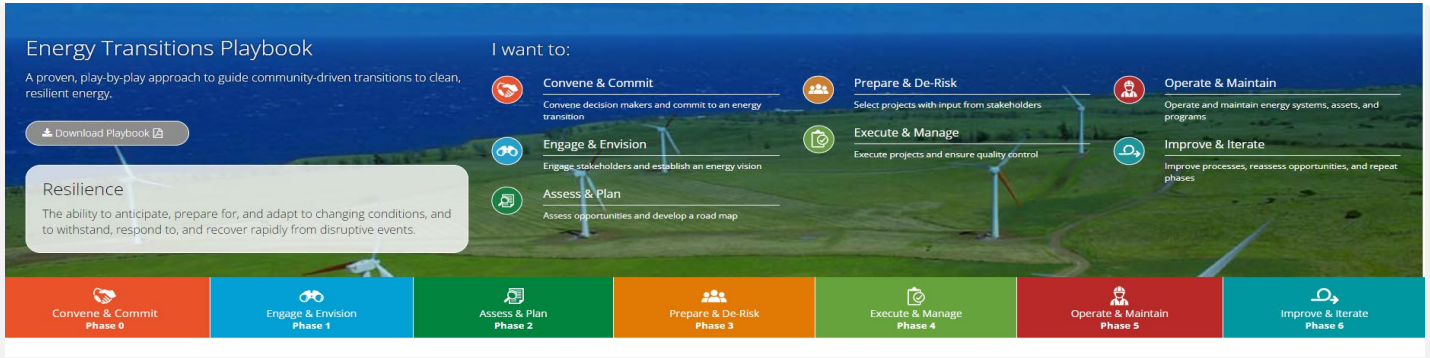
Tools

- Engage, FRONTIER, and SUPRA
- Visual, user-friendly
- Engage multiple stakeholders



Policy Design Briefs

- First publication relates to alternatives to NEM
- Support informed design of transition approaches that fit the local need



Playbook

- Experience-informed framework
- Tactical examples, worksheets
- Supports a wide variety of stakeholders

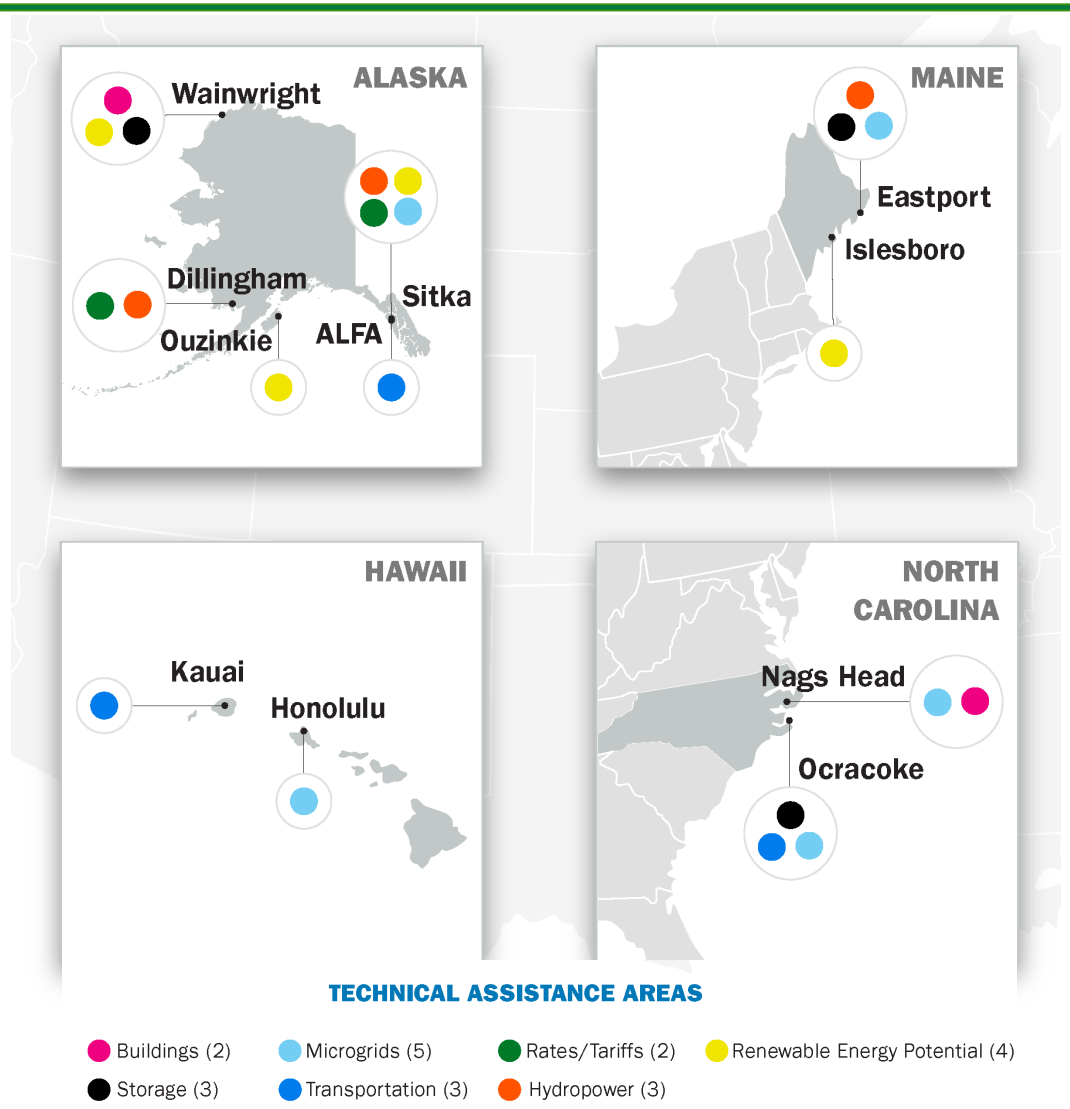
ETIPP

The Energy Transitions Initiative Partnership Project (ETIPP) is a program sponsored by the U.S. Department of Energy (DOE) that provides direct technical assistance to remote, island, and islanded communities across the United States to increase their energy resilience.

DOE offices supporting ETIPP include:

- Energy Transitions Initiative
- Office of Strategic Programs
- Geothermal Technologies Office
- Solar Energy Technologies Office
- Water Power Technologies Office
- Wind Energy Technologies Office

ETIPP Communities



Remote

Isolated from population centers with limited access to centralized energy systems

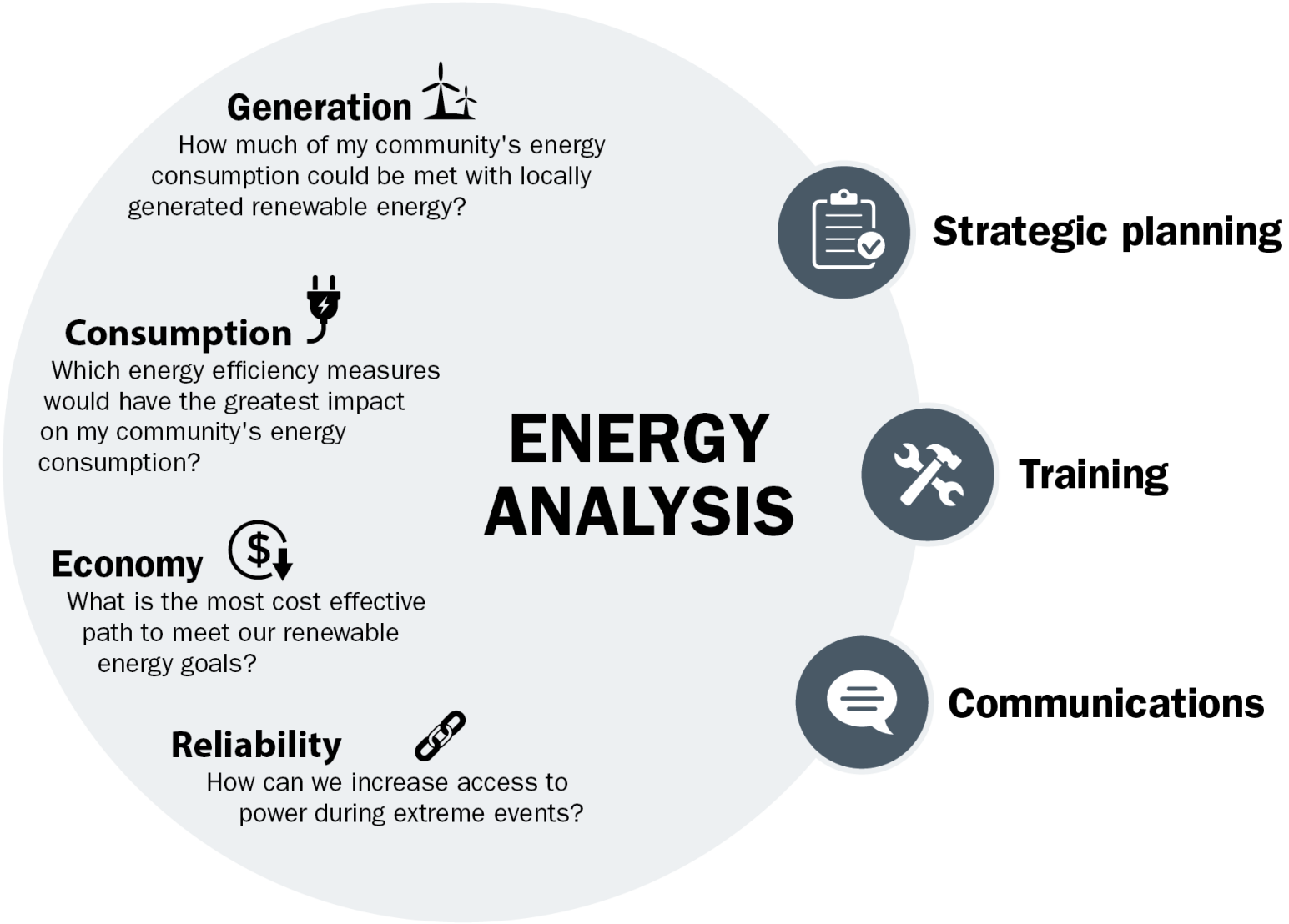
Island

Isolated from the mainland by waterways

Islanded

Disconnected from transmission-scale power systems and experience issues with power quality

What Is Technical Assistance?



ENERGY TRANSITIONS INITIATIVE
U.S. Department of Energy

Energy Transitions Playbook

A proven, play-by-play approach to guide community-driven transitions to clean, resilient energy.

Download Playbook

Resilience

The ability to anticipate, prepare for, and adapt to changing conditions, and to withstand, respond to, and recover rapidly from disruptive events.

I want to:

Convene & Commit
Convene decision makers and commit to an energy transition

Engage & Envision
Engage stakeholders and establish an energy vision

Assess & Plan
Assess opportunities and develop a road map

Prepare & De-Risk
Select projects with input from stakeholders

Execute & Manage
Execute projects and ensure quality control

Operate & Maintain
Operate and maintain energy systems, assets, and programs

Improve & Iterate
Improve processes, reassess opportunities, and repeat phases

Convene & Commit **Phase 0**	Engage & Envision **Phase 1**	Assess & Plan **Phase 2**	Prepare & De-Risk **Phase 3**	Execute & Manage **Phase 4**	Operate & Maintain **Phase 5**	Improve & Iterate **Phase 6**

Engage (Hawaii)

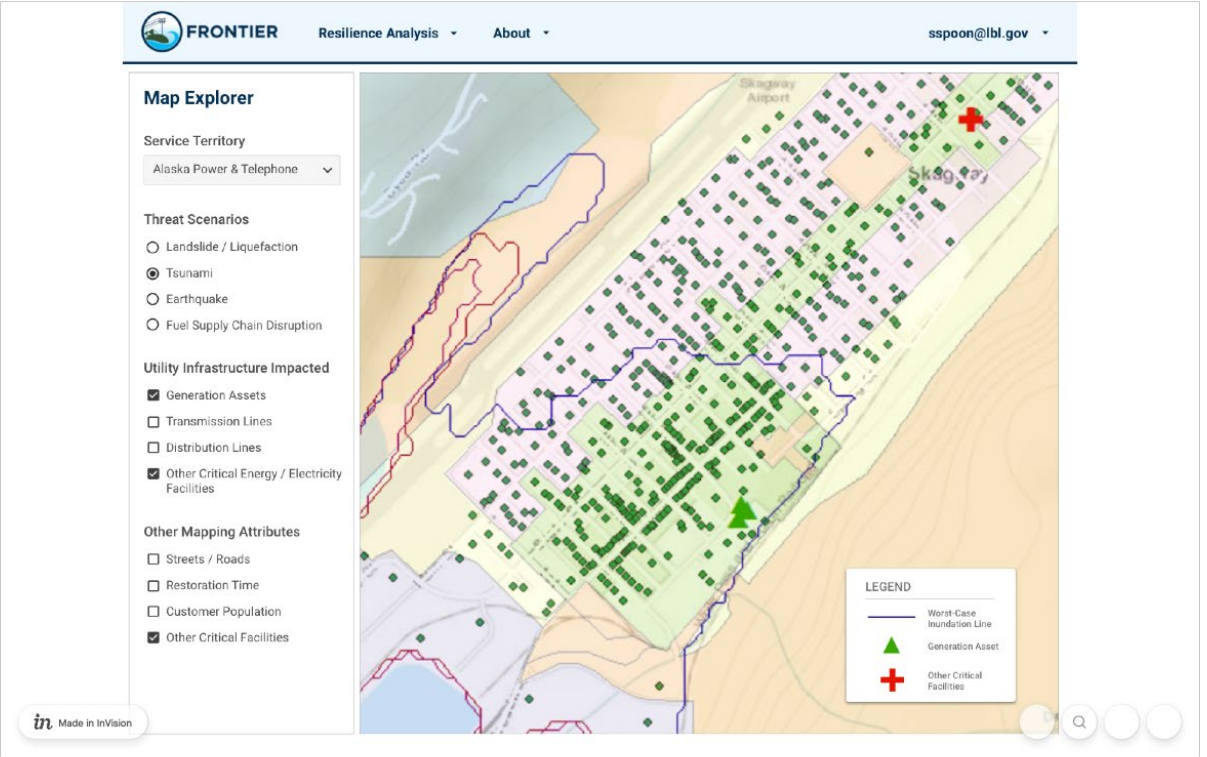
Engage helps with:

- Planning energy generation and transmission assets
- Analyzing the cost, land, and infrastructure implications of energy decisions
- Communicating the impacts of specific pathways to energy goals
- Identifying the most economic path to achieving energy transitions.

What does your energy future look like? Energy planners can use Engage in visualization environments to view the impacts of modeled scenarios.

FRONTIER

The Framework for Overcoming Natural Threats to Islanded Energy Resilience (**FRONTIER**) is an online investment decision support tool to help island(ed) utilities and their community stakeholders evaluate resilience options to mitigate future risks.



Dillingham

Description

- Applicant: Utility
- Nushagak Electric & Telephone Cooperative is an electric service provider for Dillingham and Aleknagik

Energy Challenge

- Energy needs primarily met with hydrocarbons imported by barge during ice-free summer months
- Power generation for islanded grid is a significant expense
- Requesting assistance with Nuyakuk River Hydroelectric Project that could provide base load power for two communities and reduce reliance on diesel

Technical Assistance

- Rate/tariff analysis
- Electric rate making and comparison with continued diesel generation
- Excess energy utilization impact for space heating or ice making
- Economic impact on sport and commercial fisheries

Metrics

- Replicable model for other communities
- Reduced GHG emissions
- Reduced reliance on diesel fuel

Ouzinkie

Description

- Applicant: City of Ouzinkie
- Remote community in Kodiak Archipelago on Spruce Island
- Population of 149
- Electric utility is community-owned and operated

Energy Challenge

- Rely on three diesel generators and a 125 kW-rated hydroelectric system that are aging
- The hydroelectric system is being replaced and is operating at 25%, thereby increasing the community's reliance on diesel
- Need for a replacement strategy and desire to attain diesel off capabilities.

Technical Assistance

- Renewable energy generation and storage to complement current hydroelectric generation
- Assessment of electric distribution grid replacement/upgrade
- Roadmap for energy self-sufficiency

Metrics

- Reduced reliance on diesel
- Deceased GHG emissions
- Transferable community energy self-sufficiency plans

Wainwright

Description

- Applicant: Tagiugmiullu Nunamiullu Housing Authority
- Isolated coastal Arctic community in North Slope Borough
- Population of 557
- 90% of population are Iñupiat

Energy Challenge

- Diesel-fired islanded power grid
- Building heating and power generation fuel costs are heavily subsidized by regional municipality
- Municipality imports diesel by annual barge during summer when Chukchi Sea is ice free
- 1,500-square foot former federal armory building owned by tribe is being renovated to community and childcare facility and building efficiency measures are desired

Technical Assistance

- Building performance, solar and storage, microgrids
- Analysis and project management focused on one building that they have funding to install energy efficient measures

Metrics

- Enhanced indoor environmental quality
- Improved energy efficiency of buildings
- Decreased GHG emissions
- Increased community resilience

Thank you!

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