



Building Performance Improvement Board

2/15/2023

Learn more at <https://www.montgomerycountymd.gov/green/energy/beps.html>

Agenda

- **Administrative items**
- **Recap actions from previous meeting**
- **Building Performance Improvement Plans:**
 - **Background**
 - **Qualifying Scenarios**
 - **Improvement Measures & Cost-Effectiveness**
 - **Verifying Implementation**



Administrative Items

Team Ground Rules

- Full engagement during meetings
- Listen carefully
- Don't speak while others are speaking or interrupt others
- **Let everyone speak once before you speak twice**
- Follow meeting agendas and respect common ground rules
- Review action items at the conclusion of each meeting
- Value other members' time (e.g., stick to meeting times and agenda topics, avoid off-topic tangents)
- Assume positive intent
- Maintain an open mind to other perspectives than your own
- Maintain mutual respect for one another
- Engage in respectful conflict
- Critique the idea, not the person
- Don't take yourself too seriously and enjoy our time together

Actions

- Approve 2/1 meeting notes



Previous Meeting Recap

Action Items

- Members were asked to consider BPIP criteria details for “economic infeasibility” and “other items outside the building owner’s control” as noted in the BEPS law.



Building Performance Improvement Plans Background

Regulations: Building Performance Improvement Plans (BPIPs)

The Law says:

- If a covered building owner cannot reasonably meet one or more of the applicable interim or final performance standards due to economic infeasibility or other circumstances beyond the owner's control, based on guidelines established by regulation, the owner may submit a proposed building performance improvement plan to the Department for review and approval by the Director in consultation with the Building Performance Improvement Board.
- ...the covered building will be deemed to be in compliance with the applicable interim or final performance standards as long as the owner fulfills the terms of the building performance improvement plan within the timeline specified in the plan.

Regulation Purpose:

- Define economic infeasibility and other circumstances beyond the owner's control that dictate whether the building is eligible for a BPIP



The law says, BPIP must include:

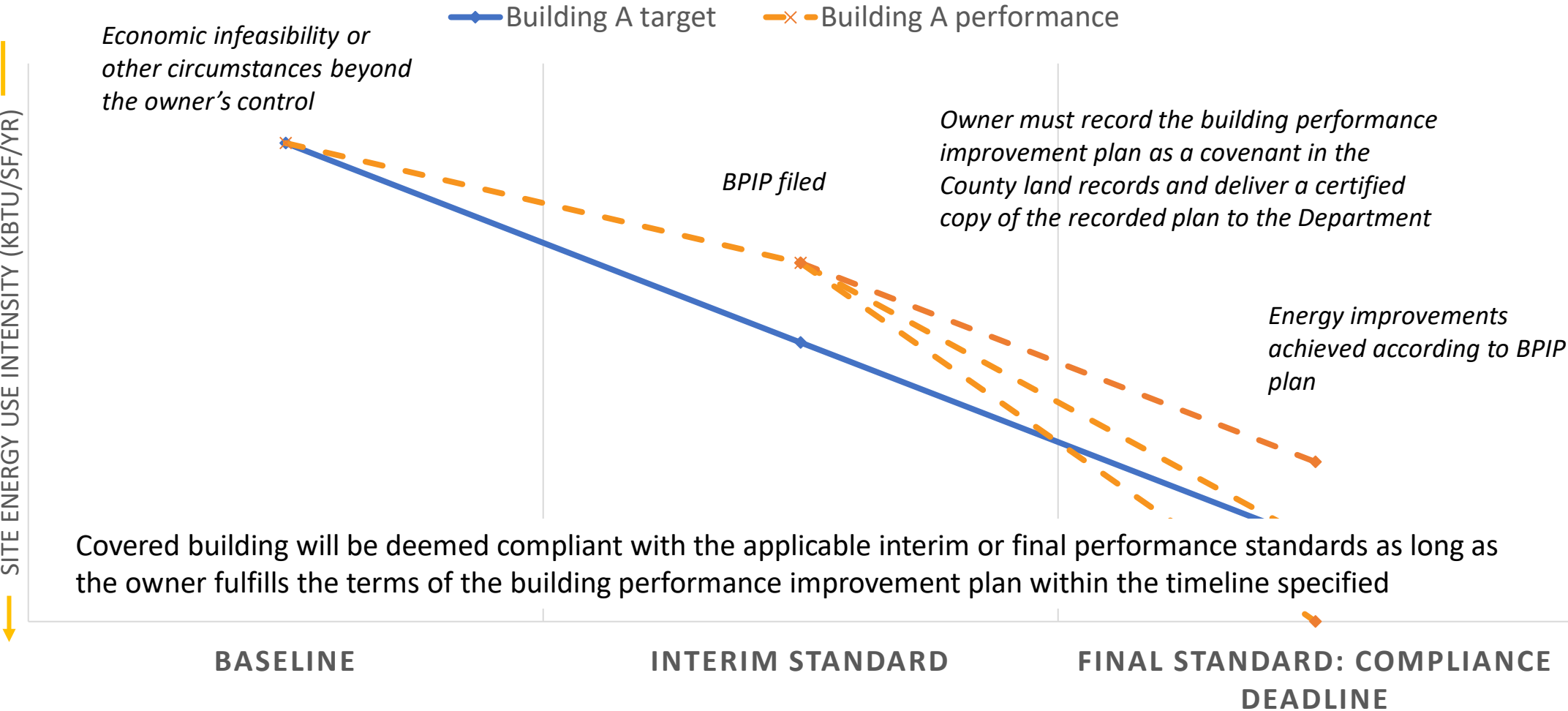
- Documentation of economic infeasibility or circumstances beyond owner's control
- List of potential improvement measures, including energy savings & cost-benefit analysis;
- Plan and timeline for achieving energy improvements to the building's performance that will provide cost-effective energy savings, including estimated savings of implementing all cost-effective measures;
- Procedures for correcting any noncompliance or deviation from the plan.

Technical Guidance:

- Establish format and required documentation for BPIP
- Define cost-effectiveness criteria for savings measures
- Establish process for verifying implementation of improvement measures on agreed-upon timeline

BPIP Basics

NEED FOR BUILDING PERFORMANCE IMPROVEMENT PLAN



Foundation

- BPIPs are not for everyone – there must be some qualifying scenarios whereby a BPIP path is allowed
- Majority of covered properties should comply through the performance pathway
- Reviewing each submission will require significant staff time
- Provides owners flexibility while still obligating them to make significant improvements to their building's performance

Overview: Washington State

Any building can opt to comply via the “investment criteria performance metric.” Process:

- **Conduct an energy audit.** A qualified energy auditor shall conduct an ASHRAE Level 2 energy audit identifying all cost effective energy efficiency measures (EEMs) and by performing the life cycle cost analysis (LCCA) in accordance with the investment criteria.
- **Implement EEMs.** Implement all cost effective EEMs
- **Develop and implement the Energy Management Plan (EMP) and associated Operations and Maintenance program (O&M).** The EMP and O&M are mandatory requirements for all covered commercial buildings.
- **Verify energy savings.** In order to show compliance with the investment criteria performance metric, post implementation energy savings shall meet or exceed 75% of the energy savings projected in the energy audit report.

Overview: Denver

- Denver has alternate compliance options (ACO) for Timeline Adjustment, Electrification Option, 30% EUI Reduction Property Type Adjustment, and Manufacturing/Agricultural/Industrial Designation
- Timeline Adjustment is most like the BPIP. The application for a timeline adjustment for a single building includes:
 - **Online application form** (documenting need) and other documentation that would support the request
 - **Energy audit:** ASHRAE level II audit and all required fields in the Audit Template Tool. The audit template tool requires inventory of all equipment, a list of all energy efficiency measures needed to reach 2030 target, and total project cost and site EUI savings, including total SIR and ROI
 - **O&M Program document:** requires O&M of all equipment, components, and systems to maintain energy efficiency
- After review of the submission, CASR will use the agreed-upon retrofit plan to create a Timeline Adjustment Agreement that is binding as the new performance requirements for the building. The Agreement will include:
 - details of the retrofit plan
 - agreed-upon timeline
 - reporting requirements
 - penalties that would be assessed if the plan is not completed as agreed (usually a higher level than regular compliance because extra time has been approved)

Overview: St. Louis

- If building owners believe that due to unusual circumstances, they will be unable to meet the building energy performance standards established by the City by the deadline or exceptionally burdened by doing so, then they may propose and present an alternative compliance plan for consideration by the Building Energy Improvement Board for approval.
- Properties deemed eligible must complete an ASHRAE level 2 audit or complete a retro-commissioning of the property
- Compliance is achieved through application approval by the Building Division, which becomes a binding agreement between the City and owner.
- If the property fulfills the terms, including installing agreed-upon ECMs or completing its retro-commissioning within the approved timeline, then the property shall be in compliance with BEPS



Building Performance Improvement Plans: Qualifying Scenarios

Qualifying Scenarios

The Law says:

- If a covered building owner cannot reasonably meet one or more of the applicable interim or final performance standards due to economic infeasibility or other circumstances beyond the owner's control, based on guidelines established by regulation, the owner may submit a proposed building performance improvement plan to the Department for review and approval by the Director in consultation with the Building Performance Improvement Board.

Qualifying Scenarios: IMT Implementation Guide

IMT's BEPS implementation guide cites the following as potential qualifying scenarios:

- Existing equipment replacement cycles
- Financing cycles (particularly for regulated affordable housing)
- Occupancy cycles (tenant move-out / leasing cycles)
- Significant change in property type or building operations
- Designated historic building
- Campus-scale upgrades

Qualifying Scenarios: St. Louis

St. Louis cites the following scenarios as grounds for requesting a custom alternative compliance path (CACP):

- Mortgage refinancing cycles
- Alignment with life cycles of major equipment
- Long-term lease expiration
- Historic preservation
- Severe financial hardship

Qualifying Scenarios: Denver

Denver cites the following scenarios as grounds for requesting a timeline adjustment:

- **Planning for end of equipment system life (based on standard service life chart for equipment)**
- **Planning for major renovation / redevelopment planned**
- Landmark Preservation Commission review process means the work won't be done in time for a target deadline
- Financial distress - A building that is presently experiencing qualifying financial distress, as defined by any of the following: (1) the building is the subject of a qualified tax lien sale or public auction due to property tax arrearages; (2) the building is controlled by a court appointed receiver; or (3) the building has been acquired by a deed in lieu of foreclosure.
- Electrification of space and water heating equipment or the entire building
- Benchmarking exemption (1-year) for the performance period of an interim or final target
- Steam loop district system limitations
- **Innovative approach to energy efficiency to buildings pursuing innovative energy efficiency measures or strategies that have not been widely implemented by the local building industry, which result in implementation delays inherent to novel design (such as a longer design development process, extended product lead times, prolonged installation, or troubleshooting and commissioning)**
- **Change of building ownership where the new building owner will have difficulty in complying on time (for example, new owner purchases the building in 2024 and previous building owner did not make progress towards 2024 target).**
- Under-resourced buildings may qualify for additional reasons not listed, such as **financing cycles for qualified affordable housing** buildings, that would be considered on a case-by-case basis
- Natural or man-made disasters
- **Pending demolition**
- Other reasons that will be considered by CASR on a case-by-case basis

Documenting Need for a BPIP

- Building owners must submit documentation backing up claims of “circumstances outside their control,” e.g.,:
 - Equipment lifecycle – document current system age vs typical system service life
 - Occupant cycles – rent roll listing tenant expiration; lease documents showing constraints in leased space
 - Financing cycles – documentation of next financing timeframe

Discussion

- Opinions on what qualifying scenarios should apply?
- Others (besides economic infeasibility) than those presented in the previous slides?
- If others, what documentation would suffice to substantiate claim

Economic Infeasibility Considerations (from IMT)

- Economic concerns likely to be a big driver of BPIPs.
- While there will be buildings in economic situations that warrant greater flexibility, mere assertions that meeting the BPS requirements is “too expensive” should not be grounds for a BPIP
- For some buildings, the cost of meeting the performance standard may indeed be so high that it would be unreasonable to hold the owner to it.
- Departments should set a high evidentiary standard for determining this scenario as it may be vulnerable to abuse.

Economic Infeasibility Considerations

- Main buckets of “economic infeasibility,” each with different documentation needs
 - 1) Building study shows that site EUI target is not technically feasible
 - 2) Improvements have high cost and low energy savings
 - 3) Owner lacks capital to make improvements

Economic Infeasibility Considerations: St. Louis

- St. Louis may be the only jurisdiction that has outlined “severe economic hardship” in technical guidance:
- Permissible circumstances of financial hardship include those where a property:
 - Can demonstrate that they have already invested substantially in energy efficiency and additional investments do not have reasonable financial returns
 - A financial institution owns the property due to a loan default
 - The property has a senior mortgage subject to a notice of default
 - The property has other significant cash flow limitations or is bankrupt.
 - *The property was placed on the city’s annual tax lien sale list within the last two years because of arrears of property taxes or water or refuse charges.*
 - *A court appointed receiver is in control of the asset due to financial distress*
 - *The property has been acquired by a deed in lieu of foreclosure*

Note: these are grounds for a waiver in County law, exempting the building from benchmarking for any period that financial distress was evidenced

Documenting Need for a BPIP

- Building owners must be able to demonstrate definitively that it is economically unwarranted to implement the improvements to meet the BPS standard by the compliance deadline, e.g.:
 - Energy audit showing that EUI target is not technically feasible
 - Energy audit (by credible vendor to a high standard) showing total project costs and projected benefits
 - However, need to determine metric and bar of economic infeasibility either across the board or for each building
 - Could be based on discount rate or other metric that encourages longer-term planning
 - Documentation that NOI/condo reserves/others(?) that make the up-front costs infeasible (after considering all possible incentives, financing, and cash flow resources)

Documenting “Severe financial hardship” in St. Louis

- To document “severe financial hardship,” St. Louis notes supporting documentation includes but is not limited to:
 - Audited financial statements for the most recent 3 years
 - Evidence of a current tax lien on the building or a lien removed within the 2 years prior to the delay request
 - Evidence of a court-appointed receiver in control of the property
 - Evidence of a financial institution owning the property due to default by the owner
 - Copy of a deed that has been acquired in lieu of foreclosure within the 2 years prior to the delay request
 - A notice of default on the mortgage
 - Evidence of pursuing financial support and finding all options insufficient to offset the property’s conditions of financial distress. Such options could include government or utility-provided incentives and also privately or publicly offered financing (e.g., bank loans, PACE financing programs)

Discussion

- Other scenarios that would be classified as “economic infeasibility”?
- Thoughts on how to document economic infeasibility – both the metrics to look at and the documentation for different scenarios?
 - 1) Building study shows that site EUI target is not technically feasible
 - 2) Improvements have high cost and low benefits
 - 3) Owner lacks capital to make improvements
- Thoughts on whether the above metrics are the same for all building types--or if buildings need different metrics based on building type.



Building Performance Improvement Plans: Improvement Measures & Cost-Effectiveness

Regulations: Building Performance Improvement Plans (BPIPs)

The law says, BPIP must include:

- Documentation of economic infeasibility or circumstances beyond owner's control
- List of potential improvement measures, including energy savings & cost-benefit analysis;
- Plan and timeline for achieving energy improvements to the building's performance that will provide cost-effective energy savings, including estimated savings of implementing all cost-effective measures;
- Procedures for correcting any noncompliance or deviation from the plan.

Energy Audits

- Most other jurisdictions with alternative compliance path require ASHRAE level 2 audit (plus jurisdiction-specific fields)
- Energy audit may need to be done to document need for a BPIP (like financial infeasibility) and could then be used to document all potential measures, all cost-effective measures, and the timeline for executing those measures
- DEP could require use of vetted auditor or some parameters around credentials or being a 3rd party company
- DEP could require inclusion of some fields or set utility rates, equipment life, etc., e.g.,
 - For project costs: require use of incremental cost of replacement, show all possible incentives, financing, and cash flow resources
 - For project benefits: require use of uniform projected utility rates, include maintenance savings, include other benefits like rent, tenant retention, cap rate, etc., include avoided penalties

Retro-Commissioning (RCx)

- Retro-commissioning (RCx) is a process of verifying that installed equipment is operating efficiently and is capable of providing the services necessary to meet the needs of the building's occupants while reducing energy consumption.
- RCx involves a systematic investigation that optimizes building performance by identifying and implementing relatively low-cost operational and maintenance improvements, not only optimizing how individual pieces of equipment and systems operate but also how the systems function together.
- St. Louis allows retro-commissioning (RCx) or energy audit as basis of alternative compliance plan.
 - RCx may only be done once per property in the first two BEPS Cycles. May make exceptions for properties that change ownership or Property Type during this time.

O&M Practices

- Denver and Washington State both require additional documentation that operations and maintenance (O&M) best practices are established and being followed (per ASHRAE standard 100 6.2 – 6.4)
 - Denver requires only for buildings pursuing a timeline adjustment
 - Washington State requires for all buildings
- Can help assure that no- and low-cost savings opportunities have been maximized

Discussion

- Thoughts on which process or combination of processes is most likely to result in an actionable building improvement plan and yield demonstrable energy savings?

Regulations: Building Performance Improvement Plans (BPIPs)

The law says, BPIP must include:

- Documentation of economic infeasibility or circumstances beyond owner's control
- List of potential improvement measures, including energy savings & cost-benefit analysis;
- Plan and timeline for achieving energy improvements to the building's performance that will provide cost-effective energy savings, including estimated savings of implementing all cost-effective measures;
- Procedures for correcting any noncompliance or deviation from the plan.

Implementing Cost-Effective Measures

- Few examples of defining “cost-effective” in other BEPS laws:
 - Washington State requires buildings using investment criteria for compliance to complete a life cycle cost analysis (LCCA) and implement an optimized bundle of energy efficiency measures that provide maximum energy savings without resulting in a savings-to-investment ratio (SIR) of less than one
 - $(SIR = \frac{\text{projected energy cost savings}}{\text{total installed cost of the project}})$
 - St. Louis requires “agreed-upon ECMs” or completing its retro-commissioning within the approved timeline

Discussion

- Thoughts on cost-effectiveness metrics and criteria?
- Thoughts on tying cost-effectiveness to building-specific financials (which would require more documentation) or applying more broadly?



Building Performance Improvement Plans: Verifying Implementation

Regulations: Building Performance Improvement Plans (BPIPs)

The law says, BPIP must include:

- Documentation of economic infeasibility or circumstances beyond owner's control
- List of potential improvement measures, including energy savings & cost-benefit analysis;
- Plan and timeline for achieving energy improvements to the building's performance that will provide cost-effective energy savings, including estimated savings of implementing all cost-effective measures;
- Procedures for correcting any noncompliance or deviation from the plan.

If, after consulting with the Building Performance Improvement Board, the Director approves the building performance improvement plan, the owner must record the building performance improvement plan as a covenant in the County land records and deliver a certified copy of the recorded plan to the Department.

After the Director receives the certified copy of the recorded plan, the covered building will be deemed to be in compliance with the applicable interim or final performance standards as long as the owner fulfills the terms of the building performance improvement plan within the timeline specified in the plan.

Following Through on BPIPs

- Jurisdictions vary on their BPIP verification/performance requirements:
 - Denver = as timeline or target adjustments, the owner still needs to meet the new target EUI or new timeline and is demonstrated through performance
 - St. Louis = unclear
 - Washington State = Post implementation energy savings shall meet or exceed 75% of the energy savings projected in the energy audit report.

Failure to Follow-through on BPIPs

- Most jurisdictions subject building owners to similar BEPS penalties if they fail to carry out BPIPs
 - Denver = The earlier the application is submitted and approved; the lower possible penalty amount the building could be assessed in the future. Penalties may be higher (\$0.50/kBtu vs \$0.30/kBtu) the longer someone waits to file.
 - St. Louis = same penalties as performance pathway
 - Washington State = same penalties as performance pathway, though “conditional compliance” can be applied if the investment criteria verification requirements will not be met by the scheduled compliance date. Applicants can avoid potential penalty when Conditional Compliance is approved and requirements maintained

Discussion

- Thoughts on verifying project implementation?
- Demonstrate compliance through performance? Through reporting? A combination of both?

Next Steps

- Building Performance Improvement Plans
 - Need to determine criteria under which a BPIP will be allowed – “financial infeasibility” and circumstances outside of an owner’s control
 - Need to determine implementation requirements – “cost effective” measures
- Renewable Energy Allowance discussion

Helpful Links

- [Benchmarking and Performance Standards Law](#)
- [Benchmarking Website](#)
- [BEPS Website](#)
- [Building Performance Improvement Board Website](#) (will include agendas, notes, and presentations)
- [BEPS Stakeholder workgroup + report](#) – completed before bill was introduced to gather stakeholder input on BEPS policy elements
- [BEPS Technical Report](#) – outlines options for site EUI targets by building type group and assesses feasibility and costs in representative case study buildings
 - [Presentation](#) of BEPS Technical Report to Council Transportation & Environment Committee
- [Allowance for Renewable Energy Technical Report and Recommendations](#) - provides information on determining how a renewable energy allowance should be defined and implemented within BEPS regulations
- On weather and business normalization:
 - [EPA technical reference guide on weather normalized energy use](#)
 - [EPA's Recommended Metrics and Normalization Methods for Use in State and Local Building Performance Standards document](#)

Helpful Links (continued)

- [Maryland Clean Energy Center 10/25 Webinar, Solutions to Achieve Building Energy Performance Standards recording](#)
- [Maryland Department of Environment BEPS page](#)

Questions?

Emily Curley

Building Energy Performance Programs Manager

Emily.Curley@MontgomeryCountyMD.gov

240-777-7707

BPIB Webpage

<https://www.montgomerycountymd.gov/green/energy/bpib.html>

Stay Informed

Check BEPS website for real-time updates:

<https://www.montgomerycountymd.gov/green/energy/beps.html>

Sign up for [Commercial Energy Newsletter](#)



DEPARTMENT OF
**ENVIRONMENTAL
PROTECTION**