Fiscal Impact Statement

**DATE SUBMITTED:** JUNE 26, 2020

**NAME OF INITIATIVE:** ECONOMIC SCENARIO GENERATOR

**REGULATOR/BUSINESS SPONSOR:** LIFE ACTUARIAL (A) TASK FORCE

**NAIC STAFF SUPPORT:** DAN DAVELINE, DIRECTOR OF FINANCIAL REGULATORY SERVICES

**REQUESTED INITIATIVE START DATE:** AUGUST 7, 2020

**ANTICIPATED COMPLETION DATE:** DECEMBER 31, 2021 WITH ONGOING COSTS

**TOTAL REVENUE EXPECTED (2020):** $0*

(2021): $0*

**TOTAL EXPENSE REQUESTED (2020):** $41,364

(2021): $115,303

(2022 AND EACH YEAR THEREAFTER): $80,000

**TOTAL CAPITAL REQUESTED (2020):** $0

(2021): $0

*No revenue is currently contemplated for this project but the NAIC will continue to monitor the costs associated with various projects and activities that support the roll-out of PRB and reserves the right to modify its revenue structure to ensure funding to support this important regulatory initiative in the future.

I. Executive Summary:

The American Academy of Actuaries (Academy) has developed Economic Scenario Generators (ESG). These ESGs are currently used by the life insurance industry in calculations of life and annuity reserves and capital required by state insurance regulators. The ESG may be found on the Society of Actuaries website at https://www.soa.org/tables-calcs-tools/research-scenario/ and https://www.naic.org/cmte_e_lrbc.htm.

Beginning in early 2017, the Academy notified the Life Actuarial (A) Task Force (LATF) that it did not have the resources to maintain the ESGs, except in their current form, until a suitable replacement can be found. Since the NAIC does not currently have the resources or expertise to develop and maintain an ESG, a third-party ESG vendor is needed for these functions. In an open meeting held on July 16, 2017, LATF and the Life RBC Working Group (LRBC WG) requested that NAIC staff consider issuing a Request for Proposal (RFP) to address this need. The NAIC released
the RFP on March 4th and six bids were received which have been utilized to develop this Fiscal Impact Statement.

The primary reason an updated ESG is necessary is to appropriately model the ongoing downward trend in interest rates that has become pronounced during the past two years. The impact of COVID-19 has resulted in further decreases in interest rates to now unprecedented levels further increasing the need for the NAIC to develop and maintain an ESG to be used by the life insurance industry for statutory reserves which may currently be understated under the current model.

The purpose of this Fiscal Impact Statement is to engage a consultant to provide, maintain, and support an ESG producing real-world interest and equity scenarios to be prescribed for use in calculations of life and annuity Statutory reserves according to the Valuation Manual (e.g., VM-20, VM-21) and capital under the NAIC RBC requirements (e.g., C3 Phase 1, C3 Phase 2). The consultant will deliver an ESG and supporting tools that meet requirements set by regulators, along with robust documentation and training materials. On an ongoing basis, the consultant will produce the scenarios, support end users of the ESG, research changes considered by LATF and LRBC WG and implement those that are adopted.

II. Key Deliverables:

The selected consulting firm will be required to provide the following:

Initial Deliverables (Items with One-Time Costs)

- An existing ESG capable of producing, at a minimum, real-world interest rate, equity, and bond fund return scenarios for use in calculations of life and annuity Statutory reserves according to the Valuation Manual (e.g., VM-20, VM-21) and capital under the NAIC RBC requirements (e.g., C3 Phase 1, C3 Phase 2).
- Meetings with NAIC staff and regulators to discuss the vendor’s existing economic scenario generator (ESG) features and parameters, as well as potential modifications.
- Customization of ESG features and parameters to reflect any modifications adopted by regulators.
- A scenario reduction tool to allow companies to choose a specific number of representative scenarios (e.g. 100, 500, 1000, etc.) from a universe of 10,000 scenarios. Scenario subsets provided by the tool as of a valuation date must contain the same scenarios for all users of the tool.
- Calibration criteria used to determine whether stratified scenario subsets are sufficiently dispersed relative to the universe of 10,000 scenarios.
- A tool to generate scenarios for the VM-20 Stochastic Exclusion Ratio Test.
- A tool to generate the VM-21 Company-Specific Market Path method scenarios.
- A tool to generate statistics on the output of the ESG.
- Full documentation on the ESG specifications, calibration, and tools.
- Robust training materials for regulators and industry end-users.

Ongoing Production, Maintenance and Support (Items with Ongoing Costs)

- Run the ESG as of each month-end and produce the required scenarios on the first business day of the following month to ensure the information can be posted to the NAIC website so the information is available to all companies regardless of whether they have licensed the vendor’s software. Statistics on the output of the ESG are expected to be delivered simultaneously with the scenarios.
- Develop parameter updates at a frequency determined by the regulators.
- Update documentation and training materials for regulators and industry end users.
- Provide full support to end users of the economic scenario generator (ESG) scenarios who have licensed the ESG software.
- Provide help desk support to end users of the ESG scenarios who have not licensed the ESG software.
- Provide scenarios to support field testing of the new ESG under regulatory reserving and capital frameworks.

III. Financial and Organizational Impact:

Requested expenses are estimated to be $41,364 in 2020, for initial deliverables with a one-time cost of $80,000 to be expensed over 11 months ($36,364 in 2020 expenses), plus a portion of the annual ESG software licensing fee of $30,000 ($5,000 in 2020 expenses).

Requested expenses in 2021 are estimated at $115,303, which includes the remainder of the one-time cost of $80,000 ($43,636 in 2021); ongoing maintenance, production, and support ($40,000 annually, of which $16,667 will be expensed starting August 2021); the annual ESG software licensing fee ($30,000); the annual fee for an Application Programming Interface (API) tool which will allow the ESG to interact with the AXIS actuarial modeling software ($10,000); and a one-time cost for set-up of the API tool ($15,000).

Requested ongoing annual expenses in 2022 and future years are estimated at $80,000, which includes ongoing maintenance, production and support ($40,000), the annual ESG software licensing fee ($30,000), and the annual fee for the API tool ($10,000).

NAIC staff will assist the firm as needed with the setup of conference calls and will provide any necessary assistance to the selected consulting firm to complete the project in a timely, appropriate manner.

IV. Risk Management Plan:

ESGs are not a new concept and various firms, including those bidding on this project, have well established ESGs, and therefore risks associated with this project are low. However, further work will be necessary to leverage, and where directed by regulators, modify the ESG, which will take time due to the complexity of the topic and the public discussions necessary to do so.

V. Security Impact:

The selected consulting firm will be responsible for the ESG and development of the data produced there will not have a security impact to the NAIC for this process.
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<tr>
<th>Description</th>
<th>August</th>
<th>September</th>
<th>October</th>
<th>November</th>
<th>December</th>
<th>Total Budget</th>
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**Fiscal Impact Statement Project Cost Analysis**

**Economic Scenario Generator**

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**Anticipated Completion Date:** December 31, 2021

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